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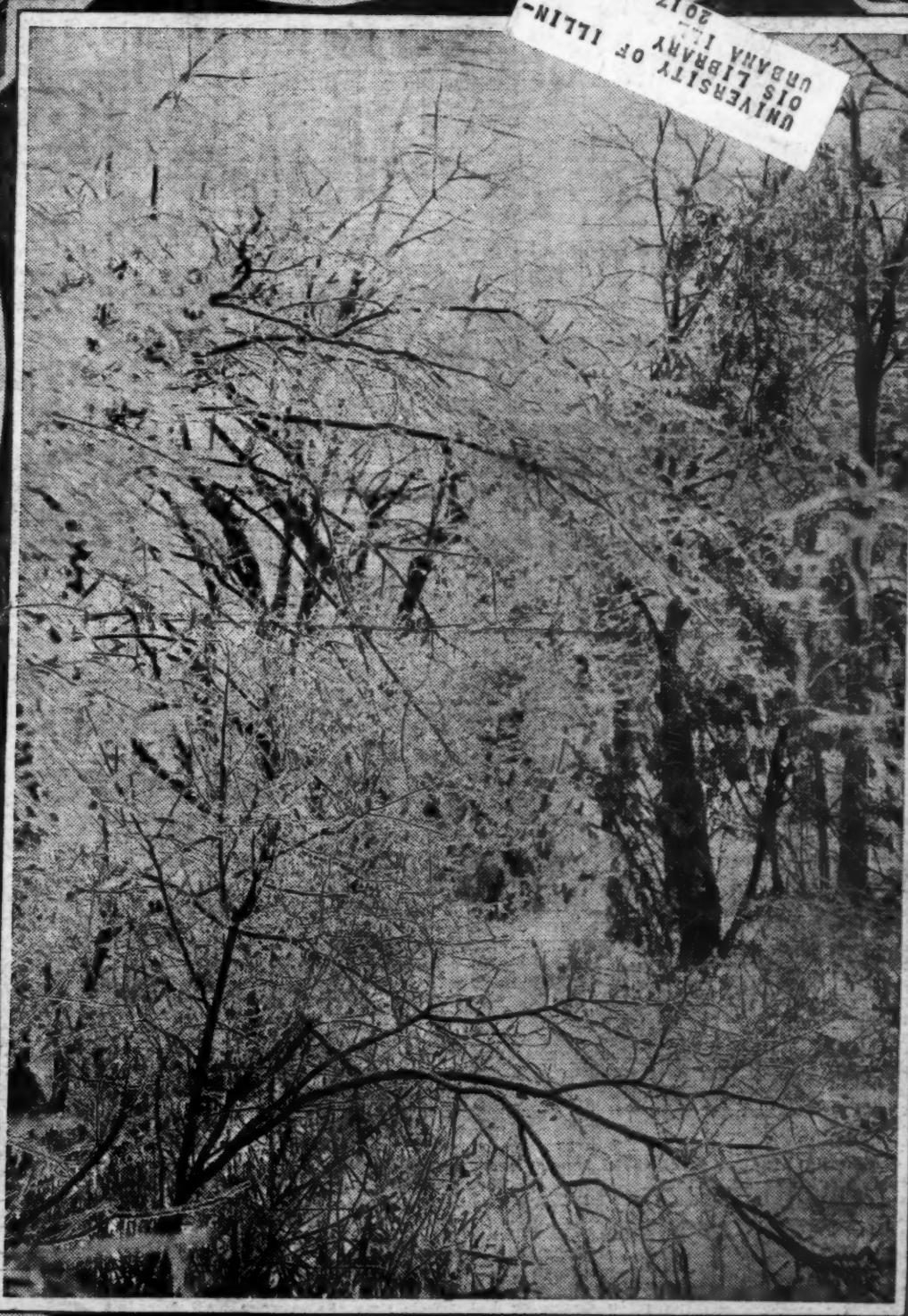
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COLMAN'S RURAL WORLD

DEVOTED TO AGRICULTURE HORTICULTURE HORSES CATTLE SHEEP SWINE ETC.

OLDEST AGRICULTURAL AND LIVE STOCK JOURNAL IN THE MISSISSIPPI VALLEY

Sixty-Eighth Year. ST. LOUIS, MO., MARCH 18, 1915. Volume LXVIII. No. 11.



UNIVERSITY OF ILLINOIS
URBANA ILL.
2017-FEB-17

After the Storm

WHAT OUR READERS THINK & DO

SOLVING THE FARM HELP PROBLEM.

Editor, Rural World:—The farm help problem is receiving much attention from the farmers and farm press alike. It is a problem that vitally concerns every farmer. That there is a farm help problem no farmer can deny. Farmers are complaining more and more of the scarcity of efficient farm help. What is the cause of a state of affairs when the farmer can no longer get the help he needs and at reasonable rates? Is the farmer himself or the farm help to blame? Are the young people deserting the country for the city?

Farmers all over the country are complaining of the scarcity of farm help. Many farmers say they cannot get the help they need, and that the help that is available is inferior as farm labor. These farmers undoubtedly know what they are talking about. But who is to blame for this state of affairs—the farmer or the farm help? In my opinion both are to blame. Many young men are leaving the farms to engage in other occupations in the cities because they feel that farm work is not remunerative enough. Whether they actually better their condition by leaving the farm is doubtful, but the fact remains that they are leaving the farms and leaving the farmers short-handed, and the farm help problem will never be solved until conditions are changed to such an extent that farm life will look more attractive and be more remunerative to our youths.

On the other hand many farmers are doing absolutely all they can for their farm help, both in the matter of wages and otherwise, and still can't get the farm help they need and must have. The farmer's position is not enviable in this matter. When a manufacturer can't get enough help he is forced to pay his hands higher wages, but he can afford to do so for the simple reason that he can raise the price on his product whenever his manufacturing costs increase. But it is not so with the farmer. The farmer is the only producer who cannot fix the price he is to receive for his product. The farmer must accept the market price for his farm products, no matter how low it happens to be. And price for his crops being a fixed one, the farmer cannot pay more than a certain amount of wages without running his farm at a loss—not unless he can increase the amount of work each man can do by installing better and improved farm machinery.

But there are also some farmers who could afford to pay their help better wages and still make a neat profit from their farm. This class of farmers usually pay starvation wages as long as anybody can be found to work for them. It is these farmers, many of whom are the largest employers of farm help, who are doing much to make the farm help problem a more serious one by grinding their help to the utmost and paying them skimpy wages. These farmers are not numerous, but there is usually one or more in every community. I personally know a number of them.

One farmer in particular deserves mention. This farmer is not a poor one who is having a hard time to make both ends meet, although he was at one time. On the contrary he is quite prosperous, one of the most prosperous farmers in his community. Yet this farmer regularly hired women to work in his harvest fields, paying them the salubrious sum of 75 cents a day and working them from 6 a. m. till 8 p. m., when he generously allowed them to go home and have their evening meal. That is he regularly hired them on these handsome terms until the year came when he suddenly found there was no farm help to be had at any price. That year he himself had

to sweat in the sun's heat from dawn to dusk, although he received more than 75 cents a day for it, and every time I passed his harvest field and saw him sweating I secretly gloated over what he called his misfortune. By his greediness, this farmer forced nearly all the farm help out of the neighborhood and thus made it hard for his neighbors as well as himself to secure the help they needed.

There are, however, a good many farms, especially small farms, on which the farm help problem is unknown. The farmer only needs one or two farm hands; if he is lucky enough to get good ones, he treats them fair and pays them fair wages and in turn they willingly work as long as the farmer himself does, and it runs pretty well up into long hours on some days. These men frequently stay on one farm year after year and are almost regarded as members of the farmer's family. But unfortunately cases like these were more numerous a generation ago than they are now.

The farm help problem will never be wholly solved, but every farmer can solve his own farm help problem if he earnestly desires to do so. There are always men looking for work in every community, and the farmer who can offer them the most attractive proposition will secure their services. The farmer who is willing to pay his farm help good wages, who treats them like human beings instead of mere hirelings, makes them feel welcome to a place in his home and last but not least is not anxious lest they overeat themselves will solve the help problem without difficulty.—J. A. Reid, Pennsylvania.

WHO GETS THE PROFITS IN WHEAT?

Editor, Rural World:—Again the American farmer is having his eyes opened as to the annual profits that his dear friends—corporate wealth and gambling Wall street make on his production. The wheat farmer who held his wheat is indeed a wise man, but few the number that belong to this class, the balance are giving themselves their annual kick and howling over their misfortune, while the money barons are again raking in the shekels.

No one ever hears of high wheat prices around harvest time. No! indeed! The great cry then is "Money to move the wheat crop!" Why? Because the sooner it is stowed away in the elevators of corporate wealth the earlier the date the speculators can squeeze the public. Great corporations and moneyed institutions do not care anything for the farmer only in so much as they can use him for their own selfish ends. Will the farmers never learn to build grain houses and hold their product, letting it go only a little at a time and thereby enjoy a better price for the fruits of their labor instead of turning it over, as it is harvested, to a crowd of gamblers that prey upon the needs of mankind?

The price paid the farmer for his wheat last summer just after the harvest, was about 69 to 70 cents. At St. Louis it is now quoted at \$1.43 or over. An increase in price of over 100 per cent and very few farmers are realizing on it, because 75 per cent of them sold their wheat as quick as they could last summer. The gambler, the speculator, and the high financier, the fellows who wear tailored clothing and ride in closed cars this kind of weather, are the boys who are reaping the fruits of the farmers' labor, and they are allowed to do it year after year.

The farmer could have built and paid for an ideal grain house, and had money in the bank besides, just from the increased price alone. It was all pure profit, a rich surplus and the farmer let it get away from him because he was afraid the gamblers might force the price down, or because he needed a little ready money. Will the farmer never learn or profit by past experience? Until he does, the other fellow will continue to reap the real profit and take life easy, while the farmer does the hard and the dirty work.

The two chief reasons given by most farmers for the sale of wheat immediately after it is threshed, is that they need money and that the roads are usually in good condition during the

summer and early fall for hauling the wheat to market or to ship. The first is a really trying problem, but if the farmer who is so situated should hold back every bushel he possibly can, it will not take many years until those few bushels held back become many bushels and the increased price he obtains from it will put him, as the saying goes, on easy street.

Let me sight the case of two farmers, both fairly prosperous. One built a grainhouse with perfect ventilation for his grain. The first year he more than paid for it by obtaining an increase in price the next spring. This year he had a fine crop and will clear at least 104 per cent that would have been lost had he done like his neighbor who, as soon as he could get a car after threshing, sold his entire output for 69 cents a bushel. The one is getting what is justly his; the other is drinking his cup of wormwood. The one can take life easy and the other must continue to drudge.

The claim was made in Chicago that the present high price of wheat was due to the farmer withholding it. That statement is not true; but it ought to be true, for the farmer could get whatever price he chose to ask if he but used the power that is his and did not dump his product on the market in one heap, thereby swamping the market and forcing the price, for a time, down to where the other fellow wants it so he can get it and make his easy money. The farmer gets the blame for the high price of living, except at election time, but as a rule he is not the man who actually gets the profits.—Wm. H. Pfeifer, Missouri.

SMALL FARMS SHOULD BE BETTER CULTIVATED.

Editor, Rural World:—Many farms, in fact, the great majority of them, spread their labor over too large an area of land; doing nothing well, and being always hurried and behind in their work, with little or no time for rest or recreation. By attempting to cover too much ground the work is only half accomplished, with the result that the yield is much lessened and the quality of an inferior grade, so that the returns from the large farm, in many instances, will not cover the cost of production; while, if there should be a small surplus, large taxes and cost of repairs will swallow it up, so that the hard-worked farmer has little or nothing to show at the end of the year for his long season of tedious labor.

Of course, there are some men, who possess capital and exceptional business talent, who are making large farms pay all expenses and yield a handsome profit besides; but the majority of farmers will secure better results and obtain more real benefit from their farms by adopting a system of intensive farming; that is, by a systematic rotation of crops, by utilizing all the manure made on the farm, the timely destruction of weeds, etc., etc.—H. Mortimer, Illinois.

MONSTER APPLES AND EGGS.

Editor, Rural World:—I just finished eating a Ben Davis apple that measured 13 inches in circumference and 3 3/4 inches in diameter. I ate one-half of it and my wife ate the other half. Just measured also a Grimes Golden that is 10 3/4 inches in circumference and a White Plymouth Rock hen's egg that measured 6 1/2 inches in circumference. Both apples and eggs were produced on my farm in Lawrence county.—E. N. Hendrix, Missouri.

[Note.—From Mr. Hendrix the Rural World received last week five specimen apples, each one of a different variety—Grimes Golden, Ingram, Mammoth Black Twig, York Imperial and Ben Davis. Each specimen was typical of its variety although much larger than the average. All were in good condition, considering their respective seasons and the fact that they had been out of cold storage about two weeks. For the privilege of examining these apples as well as for the pleasure of eating them, Mr. Hendrix is asked to accept our thanks.—The Editor].

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Missouri, with 797,000 milch cows and 1,414,000 other cattle, is among the leading cattle states. Each year our cattle top the St. Louis and Kansas City markets. Missouri milch cows, too, have established high records in milk production, with an efficient veterinary service, under direction of the state veterinarian and State Board of Agriculture, there has not been one case of foot-and-mouth disease in Missouri.

THE FARM NAME.

The first farm name registration law enacted by any state was introduced in the Missouri legislature of 1907 by the present assistant secretary of the Missouri State Board of Agriculture. More than a dozen states now have such a law. In Missouri registration is made with the county clerk.

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COLMAN'S RURAL WORLD

Vol. 68. No. 11.

ST. LOUIS, MO., MARCH 18, 1915.

WEEKLY.

Transform Poor Trees Into Good Ones

Graft the Undesirables---Put New Heads on Old Bodies---Make Your Orchard Trees Bear More and Better---"By Their Fruits Ye Shall Know Them."

By F. H. Sweet, Virginia.

NEARLY every home orchard contains a number of trees of varieties that are not good enough. Perhaps the trees were bought for Baldwin or some other improved variety, but they turned out to be "not true to name"—a common misfortune of people who buy from tree agents or think only of cheapness. Even if you plant good varieties, the time is pretty apt to come when you will want to make a change. You will taste apples of other varieties that you like better. Often a man desires more winter sorts and fewer summer and autumn varieties; and having no more room to plant trees he would like to make some of his autumn varieties bear apples that will last far into the winter. Often the enthusiast on new varieties has little sapce, and would like to get at least one or two branches of a promising new sort. Other home fruit growers have seedling trees that have come up by the fence or out in the pasture or in the back yard, where fruit refuse has been thrown.

It will be a great saving if these undesirable trees of various kinds may be made over into better sorts. It takes so long to bring a fruit tree into bearing that we cannot afford to cut down these trees and plant others, if they can be utilized and improved. This can be done very readily in most cases, providing the trees are not already stunted and weakened by neglect or disease. How to do it is the object of this article.

Grafting Has Limits.

In the first place, they must not be too old. I have seen trees that were 50 years old that were grafted over very successfully, but usually it does not pay to attempt the rejuvenation of very old trees. As a general rule, trees under 20 years of age can be grafted successfully, provided they are vigorous and healthy, and of good form. Beyond 20 years, the difficulties increase and the likelihood of successful results decrease. The sooner an unprofitable tree is grafted, after discovering its nature, the better it will be for the tree and for you.

Not all young and healthy trees, however, can be grafted. Of the fruits commonly grown in the home fruit gardens of the north, apples, pears, plums, cherries and quinces can be changed to another variety in this way. Peaches and apricots, which have a softer and more pithy wood, can be grafted only with difficulty. When these fruits need to be "worked

Self-Sterility In Fruit Varieties

HERE is no one question that is asked more often by the amateur fruit grower than this: "Why does my tree not bear fruit?" The enquirer may have only one tree in his back yard—an apple, a pear or a plum—that was planted and cherished with great expectations. It blossoms, but that is all. No fruit appears, and the owner wonders.

Here's the answer: The tree probably is of a variety that is self-sterile; that is, the ovules of its flowers refuse to be fertilized by pollen from the same flowers or from any other flowers of the same variety. It cannot produce seeds, and without seeds there can be no fruit.

Here's the remedy: Graft some of its branches with cions from a different variety of apple or pear or plum, as the case may be. This will insure cross pollination for both and yield the family two kinds of fruit.

Here's the reason: Many varieties of fruit, not all, require cross-pollination in order to bear good crops because, as Darwin said, "nature abhors self-fertilization."

Here's the point: Do not plant single trees or solid blocks of one variety unless it is positively known to be self-fertile. Other varieties should be planted in pairs or in greater numbers, or should be partly top-grafted, for home gardens, or planted in strips of six to ten rows wide for commercial orchards.

Select as pollinizers strong-growing, free-blooming varieties that are useful for their own fruit, and that blossom at the same time as the self-sterile ones. The bees will do the rest.

over," they are commonly cut back, to induce a vigorous growth of new shoots, and these shoots are than budded in August or early September.

Grafting has limits which the practical man will heed. It is possible, for instance, to graft apples into pear trees, or vice versa. This is not a fruitful union. There is less difficulty with the stone fruits, for peaches can be grafted upon plums without difficulty, and, in fact, peaches that are to be planted on heavy soil are often budded on plum seedlings. The different species of plums, as the European, from which comes most of the common varieties; in the east, the Japanese, and the various kinds of wild plums, usually work upon one another successfully. The common pears can be grafted upon varieties of the Chinese type, Bartlett on Keiffer, or vice versa. Sour cherries can be changed into sweet cherries, or the reverse; wild black cherries can be changed into improved sorts. But it is usually safer and better to graft upon any tree only a variety of the same kind or class of fruit. The home fruit grower will thereby avoid the disappointment which promiscuous grafting has brought to many enthusiastic but impractical orchardists.

Graft in Early Spring.

In order to change over a tree from one variety to another, we shall have to amputate most of the limbs. Because this can be done with the least shock to the tree while it is not growing, and because the grafts usually "take" better if the tree begins to grow soon after they are put in, it is commonly considered that the best time to graft is in early spring, just as the sap begins to flow and the buds to swell. But grafting can be done successfully for a month and a half before this, even when the trees are snow-bound. At that time, however, the operation is performed under greater difficulties, especially the waxing of the stubs. Grafting can be done even as late as a month after the trees are in full leaf, if dormant cions are used. But the best time is at the beginning of growth.

The first essential is a bundle of selected cions or shoots suitable for grafting, of the variety desired. If grafting is done at the time the buds start or later, the cions should be cut some time during the winter, before the sap begins to start them to grow-

ing. If trees are grafted before their buds start, the cions may be cut at the time of grafting. It is always better, however, to cut cions early and store them in the cellar until needed, packed in moist sand. The general rule to observe in all grafting is to have the stock—that is, the tree which is to be grafted—farther along in growth than the cions. In grafting trees that have already started into growth, cions may be cut at that time, and grafted with some degree of success; but it is always best, if possible, to use perfectly dormant cions, no matter what may be the condition of the stock.

Selecting the Cions.

The cions should be cut only from the ends of bearing branches, and should always be of the last year's growth, never older. The part of any shoot that has spurs or small branches should not be used; it is more than one season old. Do not yield to the temptation to take suckers or water sprouts for cions, whether they spring from the limbs or from around the base of the tree. Although these shoots are long, smooth, straight and "work" easily, they cannot be expected to grow into as fruitful branches as shoots taken from the ends of bearing branches, since they are of an over-vigorous growth, and since they do not have strong buds.

The shoots from which cions are to be cut may be of various lengths. Tie them in small bundles with the ends cut even, and pack the bundles in a soap box, with a few inches of moist sand at the bottom and an equal amount between each layer of bundles. Put the box in a cool, not a hot, cellar until the time for grafting arrives. Keep the sand barely moist, so the cions will not shrivel. If a cool cellar is not available, the cions may be buried in mellow, well-drained soil out of doors, only their tips being above ground.

If a tree is five or six years old, or less, the limbs are probably mostly one and a half to two inches in diameter. Cut off all but one or two of these from twelve to eighteen inches of the trunk. Always select a place on the branch that is free from knots, or small limbs which will make it difficult to split the branch. It is safer not to cut off and graft all the limbs on a young tree, but to leave a few, especially the smaller, to

help the grafts along in spring. When cutting limbs for grafting, bear in mind that it is very desirable that the tree shall be shapely and well balanced after the grafts have grown into limbs; therefore, distribute the grafts evenly over the tree. A top-grafted tree rarely becomes as shapely a tree as one budded or grafted at the crown when young. It is likely to be somewhat sprawling and unbalanced. But good judgment in placing the cions will largely minimize that fault.

Grafting Old Trees.

Older trees require still more care in preparation for grafting. Good judgment must be used to set cions into a large tree so that when all the old branches are removed and only those which grow from the cions remain, the tree will be of good form and have no large gaps. Practically all of the limbs under three inches in diameter should be cut off at a point where there is a few inches of growth free from branches or knots. It is rarely advisable to graft limbs more than three inches in diameter. A good grafter always prefers to set cions in several branches from one inch to one and one-half inches in diameter, than to graft the one very large limb from which these sprang. The cions "take" better in small limbs and the wounds heal quicker.

Cut limbs for grafting in all parts of the tree—the center, top, side and lower limbs—so that a well-balanced tree may be formed by the growth of the cions. Use a sharp saw and take the limbs off square. Graft many limbs from three-quarters of an inch to two inches in diameter; few from two to three inches; none, except in special cases, above three inches. The limbs should be cut off at the time of grafting, not before, or there will be an unnecessary loss of sap.

Having cut off the limbs that should be grafted, the next step is to prepare the stub to receive the cion. There will be needed a grafting knife; a mallet, or something like a policeman's billy; and, if the tree is large, a step-ladder. There are several kinds of knives. A good grafting knife can be made by your blacksmith out of an old file. It should be sharp-edged, broad-backed, and have a cutting edge at least four inches long. At one end should be a wedge for holding open the crack while the cions are being inserted. It is convenient, but not essential, if the other end is hooked, so that the tool can be hung on a nearby limb when not in use. Most seedsmen sell

Plums and Peaches

Cherries and Grapes

There are no varieties of plums that are reliably self-fertile. Nearly all of them are self-sterile, especially the native or American kinds. Peaches are generally self-fertile.

Differences in cherry varieties have not been fully determined. The sour cherries seem to be self-fertile, and the sweet cherries, self-sterile.

Cross pollination is necessary with grapes of most varieties. Some that need it most are:

America, Barry, Black Eagle, Brighton, Gaertner, Hayes, Herbert, Jewell, Lindley, Nectar, Salem, Vergennes, Wilder and Wyoming.

Apples and Pears

That Are Self-Sterile.

The following list of apple varieties have been found to be self-sterile, some more possibly so than others:

Bellflower, Chenango, Early-ripe, English Russet, Fanny, Gilpin, Gravenstein, Grimes, Tompkins King, Lilly of Kent, Missouri, Nero, Northern Spy, Strawberry, Paragon, Primate, Rambo, Red Astrachan, Red Streak, Roxbury Russet, Spitzenberg, Stayman, Tolman, Williams, Winesap, York.

Self-sterility is found in pears to a greater degree than in apples. Well-known varieties so affected are:

Bartlett, Bosc, Anjou, Clairseau, Clapp's Favorite, Howell, Idaho, Keiffer, Lawrence, Sheldon and Winter Nellis.

a good style of grafting knife for 50 to 75 cents.

Preparing Cion and Stock.

Split the stub the way it will split the easiest; as far as the growth of the cion is concerned, it makes little difference which way. Do not split the stub too deeply—only deep enough to receive the cion—knock the knife out with the billy and drive the wedge end of the knife into the crack at the center of the stub, leaving room on either side for the insertion of the cions. If the stub is very small, the wedge must be inserted on one side. The stub is now made ready to receive the cions. The work begins to get exciting.

Select the strongest of the shoots, which have been previously cut from a tree of the desired variety, preferably about one-quarter of an inch in diameter, and bearing large buds. Cut off a cion about five inches long, having three to five buds. The knife should have a razor edge. With two quick, clean strokes cut the lower end into a wedge, somewhat thicker on one side than the other. Close to the upper end of the wedge, on the thicker side, should be a bud. The wedge should be from three-quarters of an inch to one and a half inches long, depending upon the size of the cion. Usually it can be made to best advantage when cut towards the person, not away from him. Do not leave a rough, jagged surface. With a sharp knife and a little practice, the wedge may be made with two cuts. If a number of stubs are to be grafted immediately, a quantity of cions may be prepared; but not far enough ahead so that they will dry out.

Have Growing Tissues in Contact.

Unless it is very small, each stub should have two cions, one on each side of the split. Only one cion is needed if it grows but two are almost always put in because the probability of getting one to grow is greater and because the end of the stub heals better if two cions start into growing. Let the two cions be of nearly uniform size and adapted to the size of the stub. Push the cion, with the thicker side of the wedge outward, down into the crevice very firmly, setting it not exactly even with the outer bark of the stub, but a trifle inward. The union between the stock and cion will be only where the green inner bark of one touches the green inner bark of the other. This green "cambium layer" is the chief seat of the life activities of the tree. Hence we must place the cion so that its inner bark will come into contact with the same layer of the stock. In order to be sure that the two inner barks do join somewhere along the length of the wedge, it is a good plan to place the bark at the top of the wedge flush with the bark of the stock, and tilt the top of the cion outward. Insert two cions, and remove the grafting knife. The reason for making one edge of the cion thicker than the other can now be seen; the outer edge being thicker the cion is bound more firmly at the point where union must take place than it would be if the wedge was of uniform thickness.

The tree has been severely injured by this grafting. There is the worst kind of a wound—a split—at the very point which we wish to be strongest. Decay there would be fatal to the graft. It must be prevented. Before going into the orchard you should have provided yourself with grafting wax. For the home fruit grower who has only a few trees to graft over, it is usually better to buy the wax already prepared. Most nurserymen and seedsmen sell it. There are many recipes but one of the best is this: Resin, four parts; beeswax, two parts; tallow, one part; all by weight. Break all the materials into small pieces and melt together. When all melted and thoroughly mixed, pour the hot mixture into a pail of cold water. When it is hard enough to handle, grease the hands with hard tallow or cheap vaseline and pull it until it becomes light colored, like molasses candy. Be sure that the resin is all melted; do not have it appear as little lumps in the completed wax. Having made the wax, put it on the end of a small stick, for convenience in carrying.

In covering the stubs, the wax must be soft enough to work easily

with the fingers. In very cold weather it must be melted and applied with a brush. Grease the hands well. Apply wax first to the vertical cracks in the stubs, along the entire length of the cracks, putting on a thin layer about half an inch wide. Then cover the top of the stub thinly, curling the wax over the edges. Wrap a little piece of wax tightly around each cion at the point where it enters the stub. Put a bit of wax on the upper end of each cion, to check evaporation. Do thorough work; if the wound does not heal over promptly, or decay begins, the cion never can become vigorous. Usually it is better for one person to make the stubs and insert the cions, and another to apply the wax, because of the inconvenience and the almost unavoidable smearing of the cions; but this is not essential. A number of stubs may be set before waxing any of them.

Protect With Grafting Wax.

If conditions were favorable and the work was well done, both cions will start to grow. It is a common, and a very costly, mistake to let both grow. The result is a very bad crotch which is liable to split. In midsum-



Cornfield Sown Evenly in Hills and Cultivated both ways.

mer, when it is seen that both cions are growing, cut out the weakest one from each stub. Neglect of this often spoils what otherwise would have been a very successful grafting. Keep the stub well covered with wax until it is completely healed over. Large stubs, which heal slowly, should be re-waxed every year, until the new tissue has wholly covered the stub. The wax will usually loosen and fall off during the growing season. At the end of the first season's growth, if most of the cions have taken, cut out the remaining ungrafted branches of the tree and throw all the energy of the tree into the growth of the cions.

A top-grafted tree usually will come into full bearing in from two to five years, depending on the fruit—certainly much sooner than a young tree planted at the same time would come into bearing. I have seen a tree that bore a full crop of Baldwins the fall before it was grafted, bearing a full crop of Grimes' Golden four years later. Plum and pear grafts come into bearing the third year, usually.

Oftentimes it may be better for the home fruit grower who has trees to renew to hire the grafting done. The usual charge is two to three cents for each stub in which one or both cions grow. But the whole operation is so easy to understand and so simple to perform that any home fruit grower can do it himself nearly or quite as well as he could hire it done. Moreover, there is the fascination of creating, which is instinct with every man. By all means do your own grafting; and if you do not get as many cions to grow as you would like, see if it was not due to your own carelessness rather than to that very convenient, but most unsatisfactory of excuses—"luck."

CROP EXPERT WARNS AGAINST LOSS ON CORN.

Farmers who are raising less than 30 bushels of corn per acre lack the American money-making instinct, are losing sight of big profit possibilities and are not even paying the interest on their investment, taxes, power, labor and overhead charges. That is what Prof. G. I. Christie of the Purdue agricultural experiment station of Indiana charges in a report issued by

the Middle West Soil Improvement committee.

The soil expert sounds a warning and sets forth how millions of dollars can be put into the savings banks of the country to the credit of American farmers.

The American farmer, believes Professor Christie, needs to take a lesson from the American manufacturer. The former must learn to relate his costs of production, his overhead, his various running expenses to the returns on his land.

"Raise one 80 bushel crop of corn and you make more money than by raising three 45 bushel crops," declares the Purdue man. "Fixed charges are no higher on large yields, while the cost of extra labor, fertility and care necessary to produce big crops, are but slightly greater. The cost per bushel decreases as yields increase. Normally large yields stand for quality corn which brings the top price at the elevator and produces maximum gains when fed."

The secret of 80 to 100 bushels of corn an acre, as some farmers are now getting, and which all can get, is soil fertilization. Manure, supple-

than painting with a brush. At best surface coatings are not durable. They are easily broken and weathered, but are better than no treatment at all.

Creosoting the posts is the best method of preserving the posts and one which will lengthen the life of the posts from 15 to 20 years. This method consists of thoroughly saturating the outer layers of the wood with a preservative substance that will poison the wood and deprive the fungi plants of food to live on. Creosote being an oil does more than this, it keeps water from entering the wood.

Creosoting in Open Tanks.

The treatment is best carried out by the "open tank" method. Thoroughly seasoned posts are heated for several hours in hot creosote and then allowed to cool down in cold creosote. When the posts are heated in creosote the high temperature causes the air and water to expand so that a portion of this air and water is forced out. When the posts are then placed in the cold creosote the air and water in the wood contracts, forming a partial vacuum; the creosote is forced into the wood by atmospheric pressure to take the place of the air and water driven out. This forms a shell of creosoted wood around the post from an eighth of an inch to two inches thick, depending upon the wood. This layer effectively excludes water and insects, as well as fungus plants from ever entering the post.

Where a large number of posts are to be treated it can be done quickly and cheaply by using two tanks. The posts are heated in creosote at a temperature of 220 degrees Fahrenheit in one tank and then immediately transferred to a second tank containing cold creosote. The posts should remain in each tank about three hours. When treating only a few posts, it is advisable to use but one tank, allowing the posts to cool in the creosote in which they were heated. Equally good results will be obtained in either case.

The simplest form of treating tank is an iron tank four feet high and three feet in diameter, set over a brick fireplace with a stove-pipe smoke stack. Such an outfit costs about \$12 or \$15. Often an old iron boiler can be found that will answer the purpose very well. A galvanized iron tank usually has too thin a bottom to put over an open fire. In either case a false bottom should be used to rest the posts on.

The posts should be thoroughly seasoned before being treated, as the presence of water does not allow the creosote to enter the wood freely. All the bark should be removed. Usually only about 40 inches of the post is dipped. A post five inches in diameter is both large and strong enough for the line posts and is the best size for treatment. Round posts are to be preferred to split posts because the heartwood does not readily absorb the creosote, in fact it takes up a very small amount of it.

Creosote costs from 15 to 20 cents a gallon, in 50-gallon barrels, depending upon location. Transportation, etc. A gallon of creosote will treat from four to seven posts, depending upon the wood. To a farmer who furnishes his own labor the cost of treating a post should not cost him over 6 or 7 cents and he will have a post good for 20 years.—E. G. Pegg, at Columbia, Mo., during Farmers' Week.

CHEAP FERTILIZERS EXPENSIVE.

A very large number of farmers purchase a low-grade rather than a high-grade fertilizer, because they believe the former is the cheaper. As a matter of fact, the farmer who pays from \$16 to \$20 a ton for complete fertilizer pays more for each pound of plant food than does the farmer who pays \$25 and up per ton for a complete fertilizer. The actual plant food materials in fertilizers are nitrogen, phosphoric acid, and potash. These materials in a low-grade fertilizer cost respectively about 26, 8 and 7 cents a pound, but in a high-grade fertilizer their cost is approximately 20, 6 and 5 cents a pound.

There is something radically wrong with the farmer who is opposed to good roads.

COLMAN'S RURAL WORLD

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COMMUNITY ORGANIZATIONS TO KEEP FARMERS ON THE FARM.

To increase the farmer's income is not the only thing needed to make rural life what it should be. As a matter of fact, it is the prosperous farmer who is more inclined to move to town than his less fortunate neighbor. Having accumulated a competence he wishes to enjoy it, and there are five principal reasons which led him to believe that he can do this better in the city:

First, there are usually better facilities for educating his children; second, the sanitary conditions are frequently much better in towns, and the time does not seem to be far distant when the cities will be actually more healthful than the country. Again, household conveniences, such as hot and cold water, heating and lighting systems, etc., are more abundant in the towns and add greatly to the comfort of living. Finally, there is a more opportunity for recreation in the city, and frequently, strange as it may appear, more to appeal to the sense of beauty that is inherent in practically every man.

Co-operation on the part of rural communities can do as much to alter these conditions as it can to increase the average cash income. Organizations that have these matters in charge should be regarded as quite as important as those which deal with business questions, and they should receive the same support from the entire community which they are endeavoring to benefit. The result will be a community spirit which, in its way, is capable of producing as valuable results as the national spirit. In fact: "Patriotism, like charity, begins at home; that is, in the neighborhood."

THE DEPOPULATION OF RURAL CENTERS.

According to the 1910 census returns, six states showed a decrease in their rural population. Agricultural investigators at once started to work to explain this loss. It was nothing new, nothing unheard of before. This depletion of rural sections started in New England 30 years ago. Since then it has gradually spread westward as far as Iowa. One peculiarity of the census report is that while six states report a loss in rural population, in five of them the growth of the cities more than made up for the loss, leaving the states with a gain for the 10 year period. Iowa was the only state to report an actual loss of population.

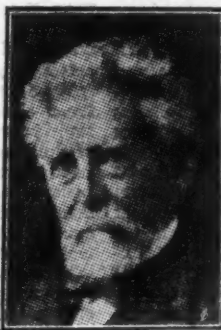
Most authorities agree that the use of modern machinery is responsible for the loss. Human labor is the most expensive labor the farmer can use. Since 1830 the efforts of inventors and manufacturers have bent on substi-

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Published by Colman's Rural World Publishing Co.

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Colman's Rural World is published every Thursday at 718 Lucas Avenue. Contributed articles on pertinent subjects are invited. Photographs suitable for reproduction also will be welcomed. Address all communications to COLMAN'S RURAL WORLD, 718 Lucas Ave., St. Louis, Mo.

Entered in the postoffice at St. Louis, Mo., as second-class matter.

1915		MARCH		1915	
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to the Farmer," discusses the whole question of food habits and should be in the hands of every farmer. It will be furnished free on request to the Department of Agriculture, Washington, D. C. Get a copy and learn that most birds should be protected. They are of inestimable value to agriculture.

PLAN THIS SEASON TO GROW YOUR OWN SEED GRAIN.

In almost all cases better seed can be raised on the farm or in the community than can be bought outside. The high-grade seed which is shipped in is brought to its high standard and kept there largely by methods that are within reach of every farmer.

Imported seed may be of high quality for market, manufacturing or feed, but it is not necessarily adapted for planting purposes in places other than where it was raised. Because a certain variety of oats yields a large quantity of high quality grain in Iowa, Illinois or Minnesota is no safe reason for believing that it will do the same in Colorado.

Farmers will usually do better if they will make an effort to raise their seeds locally, than to depend upon seed shipped in from distant points where conditions are quite different. At the same time lots of cussing of the country, soil, climate and the seed men is caused by the farmer's failure to use the fanning mill and to properly prepare his seed for planting.

The best plan to follow is to select and prepare a small amount of extra fine, clean, uniform seed. Plant this by itself on a seed plot. Use the best seed from this seed plot for the next year's seed plot and use the bulk of seed from this seed plot for the main field. That is, take all the seed for both seed plot and main field from the seed plot of the previous year.

If the farmers will follow the plan of carefully selecting, cleaning and grading their seed, they will make marked progress toward improving the yield and quality of their farm crops.

SAVE THE WASTE.

The leader of boys' and girls' agricultural clubs of the state of Washington, at a recent convention at Chicago said: "The members of the Boys' Apple clubs this past year, who canned the windfall apples, made more money from these canned apples than did the boys who packed and sold the fancy fruit."

The saving of the waste in our orchards and gardens is worth while. It may pay sometimes to devote a little time to the by-products or waste, even at the expense of the main crop.

See that the water supply for the home and for the live stock is pure and ample. On the farm one can "water stock" without fleecing the lambs.

tuting machine labor for human labor. It has been estimated that in 1899 the use of farm machinery saved this country in the cost of human labor at least \$700,000,000. A leading agricultural engineer is authority for this comparison. In 1830 a bushel of wheat represented over three hours labor. In 1896 it represented only 10 minutes of labor. In 1850 it required four and one half hours to produce a bushel of corn. In 1894 a bushel of corn could be produced in 41 minutes. No wonder American farmers are spending over \$100,000,000 a year for farm implements.

BIRDS DESTROY INSECTS AND WEED SEEDS AND ARE USEFUL

Whether a bird is beneficial to the farmer or injurious depends almost entirely on what it eats. In the case of species which are very abundant, or which feed to some extent on the crops of the farmer, the question of their average diet becomes one of supreme importance, and only by stomach examination can it be satisfactorily solved. Field observations are at best but fragmentary and inconclusive and lead to no final results. Birds are often accused of eating this or that product of cultivation, when an examination of the stomachs shows the accusation to be unfounded.

Within certain limits birds eat the kind of food that is most accessible, especially when their natural food is

scarce or wanting. Thus they sometimes injure the crops of the farmer who has unintentionally destroyed their natural food in his improvement of swamp or pasture. Most of the damage done by birds and complained of by farmers and fruit growers arises from this very cause. The berry-bearing shrubs and seed-bearing weeds have been cleared away, and the birds have no recourse but to attack the cultivated grain or fruit which have replaced their natural food supply. The great majority of land birds subsist upon insects during the period of nesting and moulting, and also feed their young upon them during the first few weeks. Many species live almost entirely upon insects, taking vegetable food only when other subsistence fails. It is thus evident that in the course of a year birds destroy an incalculable number of insects, and it is difficult to overestimate the value of their services in restraining the great tide of insect life.

In winter, in the northern part of the country, insects become scarce or entirely disappear. Many species of birds, however, remain during the cold season and are able to maintain life by eating vegetable food, as the seeds of weeds. Here again is another useful function of birds in destroying these weed seeds and thereby lessening the growth of the next year.

A new farmer's bulletin (No. 630) entitled, "Some Common Birds Useful

40 Years Ago 20 Years Ago

In Colman's Rural World.

(Issue of March 20, 1875.)

A colored preacher in South Carolina puts his foot on excessive bribery at elections and crushes it. "Dis ting," he says, "ob gettin' \$100 for a vote is all wrong; \$10 is as much as it is worth."

M. Paraf is said to be the discoverer of a way of doing without rain, if necessary. He knew that the air is full of moisture, and he knew that chloride of calcium would attract and condense it for cultural purposes. He has applied this chloride on sand hills and road beds, on grass, on all sorts of soils, successfully. . . . One of M. Paraf's applications will produce and retain moisture for three days, when the same amount of water introduced by the present method (irrigation) will evaporate in one hour.

(Issue of March 21, 1895.)

On board the Hamburg-American liner, the Augusta Victoria, we reached Constantinople. We had most excellent company on board, mostly Germans, who are great dancers. They throw themselves into the spirit of an occasion like this with heartiness and enthusiasm. I was the only American in the company who had courage to join them.—From letter written by Chalmers D. Colman, while traveling in Europe.

B. L. Grant, truck farmer of Hudson, Wis., expects to contract for 100,000 bushels of potatoes to be grown in the vicinity of Cumberland this season.

Business in St. Louis is in a flourishing condition. . . . We only need a good season for the farmers to rejuvenate the country and restore it to its oldtime condition of prosperity.

Orchard Management

Experiments in Planting, Etc., Show Results Contrary to Accepted Practice.

THE value of scientific experiments in fruit growing is not always appreciated by the practical grower. In many cases the records of professional investigation are not given their due. Instead of being studied and repeated in the commercial orchard, they are not heeded or the grower waits until some other fellow has the courage to give them a trial. The experiment stations of this and other countries are constantly discovering new facts and methods that are of inestimable value to the orchardist. These are at least worth knowing, and it is probable that a little personal investigation on the part of the grower would show that many of them are worth actual practice. In seventeen years' work at the Woburn Experimental Fruit Farm, England, certain experiments which were started with the idea of proving an object lesson in malpractice have forced conclusions in the opposite direction. The experiments conducted there in planting, pruning and manuring are briefly explained in the following paragraphs:

Various Ways of Planting.

With the object of ascertaining the effect of ramming the soil while planting, that is to say, pounding the soil until it is effectually puddled, nearly 2,000 trees and bushes were planted on 20 different soils and in eight different counties of England. An analysis of the results show that 73 per cent were favorable to ramming, 17 per cent were ambiguous, and 11 per cent were unfavorable. The rammed trees were much more vigorous in every way, and their superiority as measured by increased growth was equal to 50 per cent on the average.

With such a method of planting, some damage must often be done to the roots, and each item of such damage as well as of other supposed bad practice in planting has been the subject of separate experiments. Shortening the roots up to removing one-third of their total length proved beneficial, as also did removing all roots less than two millimeters in diameter, though loss of vigor has followed the removal of those up to four millimeters. In some cases the roots were bent and even tied in knots, and in others the roots were roughly broken instead of being carefully trimmed, without any detriment to the tree. These somewhat surprising results are quite natural when it is remembered that the life of the tree depends on the formation of new roots and not on the preservation of the old ones, and moreover that the majority of new roots do not even form near the ends of the old ones. In a large number of cases investigated it was found that with apple or paradise stock only 15 per cent of the new roots were formed within one-quarter of an inch of the old root ends, 15 per cent started from the stem itself, and 70 per cent started from other parts of the main roots.

With regard to the proper depth for planting, this must vary with the nature of the soil and the habit of the plant, but, according to these experiments, will generally be within six to twelve inches below the level of the soil, small variations of say four inches either way have been found to be quite immaterial, as the new roots have no difficulty in making their way to the level at which they flourish best. Trenching preparatory to planting, was tried on five different soils and was shown to have little effect, when measured, either by behavior of the trees or by the alteration in the water and nitrogen content of the soil. The air supply of the roots was limited in some experiments by sinking an iron drum 18 inches deep and three feet in diameter around some apple trees, and covering the top two inches with cement. After four years the trees were apparently unaffected by this treatment. Since then they have fallen behind similar trees which were not enclosed, but this is quite possibly due to ex-

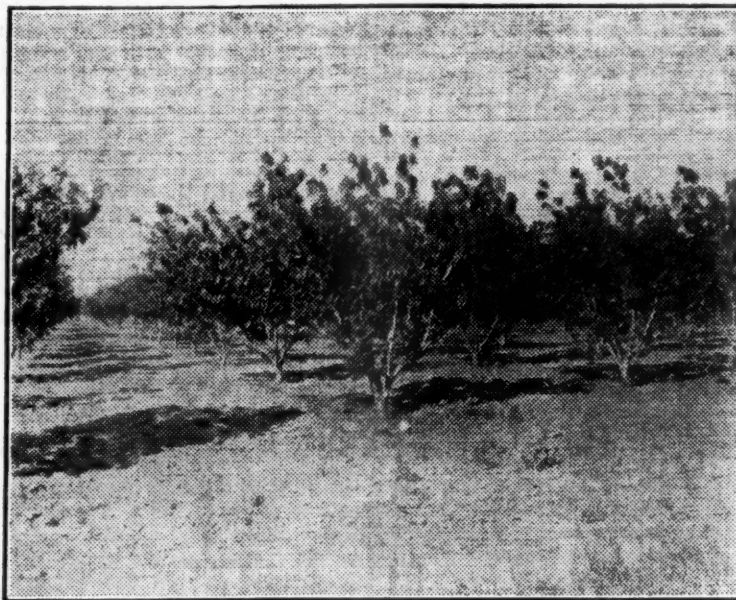
haustion of the limited amount of soil available for their growth, and not to lack of aeration.

Experiments in Pruning.

The importance of "cutting back," i. e., removing half or two-thirds of each branch of a young tree when transplanted, was shown by leaving some young apple trees uncut. Their leaves showed a 25 per cent deficit in size, and little or no new wood was formed; but given that this operation was performed before the period of active growth commenced, it might be delayed till April without detriment. With regard to the annual branch pruning, three treatments were tried in various plantations: (1) normal, or removal of one-third of each new shoot; (2) hard, or the removal of two-thirds of each new shoot; (3) no pruning. The relative sizes were as follows:

After 5 years—Normal, 100; hard pruned, 87; unpruned, 133.

After 10 years—Normal, 100; hard pruned, 82; unpruned, 107.



An Orchard of Peach Trees, Low-Headed and Well-Kept.

After 15 years—Normal, 100; hard pruned, 87; unpruned, 102.5.

These results leave no doubt that the less a tree is pruned the larger it becomes. At the same time it was shown that growth as measured by the total production of wood including clippings is least in the hard pruned tree; this deficiency in growth is greater in height and spread than in the girth of the stems. The weight of fruit from unpruned trees was double that from normally pruned trees and about four times that of the hard pruned, and the increase in crop was not accompanied by a marked reduction in the size of the fruit. Taking an average of 10 years, the apples of unpruned trees were four per cent smaller than those of the normally pruned trees, and 18 per cent smaller than the hard pruned trees.

These results naturally apply only to young trees; with older trees where branch formation is comparatively insignificant, severe pruning caused the production of new wood to be tripled. Having established the principles that the growth of a tree varies inversely with the amount of pruning, it must be borne in mind that the growth of a young tree must also be conditioned so that when it comes into bearing it will carry its crop to greatest advantage, and to this end some pruning will be necessary. Therefore, as a general principle, it would be advisable to do a certain but decreasing amount of pruning for the first five or six years after planting, at which time the annual pruning may be reduced to the removal of the few terminal inches of twigs which usually consist of imperfectly ripened wood.

Pruning has been performed in early autumn, in mid-winter includ-

ing the severest weather, and in spring, without obtaining any appreciable differences, but the results with regard to summer pruning are still somewhat ambiguous. That trees should be pruned to outside buds, also that the cut should be slanting and close to the bud appear to be unimportant details; in fact, with regard to the latter, trees pruned two inches above a bud have always done better than those pruned in the orthodox way, no doubt because the bud is weakened by having the wood cut away so close to it.

With regard to root pruning, some trees that were root pruned every four years only attained 75 per cent of the size and 44 per cent of the produce of the unpruned trees after 15 years; others that were root pruned every two years only attained 35 per cent of the size and bore an insignificant amount of fruit, and lastly others that were root pruned every year all died before 15 years. Thus, root pruning is shown to be a severe check on vegetation, and should be rarely resorted to.

Methods of Manuring.

Twenty-one plots, each containing 18 dwarf apple trees, were divided into three groups: (1) received a normal dressing of manure (12 tons of farmyard manure per acre, or its equivalent in artificials); (2) received

trees was also repeated in a very poor, sandy soil, and here the effect of manuring was very considerable, showing that the method of experimentation was not in fault. On the other hand, with bush fruits on the Woburn soil, manures have proved absolutely essential, and dung far superior to artificial, except in the case of strawberries.

Measurement of Results.

The total weight of the crop and the average size of the fruit must always be supplemented by data less dependent on seasonal fluctuations; viz., growth must be measured. In order to do this when the experiment is a short one, lasting three or four years, the trees are lifted and weighed. With longer experiments, measurements are made of height, of the spread of the branches, of the girth of the stem or of the length of wood formed during a season, or the relative size of the leaves is determined. The results obtained by these various methods have been compared with each other and with the determinations of dry matter and nitrogen in the leaves. They all show a substantial agreement, though naturally the magnitude of the difference is not the same.

Order a collection of zinnia seed. They may be planted in cold frames and later transplanted in the open. They do not yield good cut flowers, but are good as bedding plants.

To succeed in fruit growing, careful methods of orchard management must be employed, such as feeding the trees if necessary; protection against insects and disease when they are present; and the removal of any superfluous wood.

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Landscape Gardening

Fourth of a Series of Articles on Beautifying Homes in Town and Country.

By The Editor.

THERE are many species and varieties of trees and shrubs that may be used on the home grounds and in parks. The best kinds for general use are those that are native to the locality. A few others may be introduced for novelty. The selection depends upon individual preference and local conditions, such as climate and the size of the area to be planted. A few of the most common and most desirable shade trees are the following:

Among deciduous trees, the common sugar maple is one of the best and most popular for purposes of shade. It grows well, is long-lived and usually is not difficult to transplant. Its beauty and thriftiness make it a general favorite in most states north of the thirty-fifth parallel of latitude.

The Norway maple is one of the most useful trees that we have for lawn planting, but it is rather low-headed for streets. It will thrive on all kinds of soils and stand all exposures. It forms a dense and round head, attains noble size and affords excellent shade.

The sycamore maple is not so symmetrical as the sugar and Norway maples but its fine foliage and the nature of its winged nutlets make it attractive. It is hardy, healthy, easily transplanted and will thrive well even in exposed locations.

The silver or soft maple grows quickly and is attractive for a number of years, but its branches are brittle and easily broken by ice and snow storms. A variety of this, known as Weir's cut-leaved maple, is graceful. It is remarkable for its drooping branches and finely divided foliage. It is one of the best for lawn planting.

The red or scarlet maple is another valuable tree for either street, park or home planting. Among other maples that are desirable for special purposes are the Tartarian maple, the large-leaved maple, the English field maple (Acre campestre) and the dwarf Japanese maple.

The ash-leaved maple, known also as Manitoba maple and box elder, is one of the best for new places where results are wanted as quickly as possible. It grows rapidly and thrives best in moist and rich soil. It will stand hardships, as is evidenced by its popularity in the Northwest where it withstands cold and dryness. As it is short-lived, some of the more durable trees, such as sugar maple or elm, should be planted with it to come in and last long after the ash-leaved maple has served its purpose. It is especially valuable for the prairie states. The Carolina poplar is another short-lived tree that should be planted sparingly.

One of the finest of all lawn, park and street trees is the majestic American elm. It lives to great age and always is attractive in outline. Although it will adapt itself to different soils and conditions, it readily responds to good treatment and likes plenty of richness and moisture at its roots. Other elms that are useful for special purposes and locations, are the English elm, the slippery elm, the cork-barked and Siberian kinds.

The cut-leaf weeping birch is a superior subject for lawn planting, but it should not be planted too promiscuously. It is highly ornamental and is useful in producing color contrasts when planted, for instance, in front of a group of evergreens. It may be used, also, to vary the sky line of any group of trees or shrubs. For the best results, plant this birch in early spring, not late spring nor in fall. This species of birch is one of the most precious elements of the landscape. The red birch, a different species, is a graceful tree for water side plantations and for soils that are deep, moist and rich.

The foregoing list of deciduous trees comprises only a few of the best known ones. There are scores of others that could be mentioned, among them the lindens, oaks, hickories,

hackberry, green ash, honey locust, tulip tree, Judas tree or redbud, Kentucky coffee tree, and the various fruit and nut trees, wild or cultivated.

The horse chestnut and the mountain ash are undesirable. While showy at certain seasons, they are too symmetrical in outline to be beautiful. The former in particular, becomes a nuisance by dropping in great abundance its flowers, seeds and burrs.

All trees that have highly-colored leaves should be used very carefully. An occasional specimen tastefully located may lend a touch of the novel and relieve monotony. Among these are the purple beech, purple plum, golden elder. Likewise use judgment in planting the weeping mulberry, weeping elm or Kilmarnock weeping willow.

Some Evergreens or Conifers.

Pines and spruces grow naturally in many states and can be made to grow in many others where they are not native. They have an important place in producing landscape effects and in planting for protection from winter winds. They can be planted for winter effect, with striking results. Their effect is heavy, both in color and in size.

The pines have beauty and picturesque quality of trunk and foliage. Their young fresh growth is charming. The Austrian and the Scotch pines make handsome specimens and the native white pine, when young, is their superior. A small pine for planting in special position is the dwarf mugo pine, which possesses dark foliage.

Among the spruces there is the native white one and the Norway spruce, both of which are excellent for effect and for windbreaks; the latter is the more vigorous species. For a beautiful novel specimen, the Colorado blue spruce may be chosen, but not planted promiscuously.

Much beauty and variety in form are to be found in the arbor-vitae, junipers and retinosporas. Among the best of these are the pyramidal and globose arbor-vitae, the Irish juniper and the plumose retinospora. In cold localities the two latter probably would require some protection for a few years.

The only native conifer of Missouri is the red cedar. It is found on dry soils and therefore, is useful for ornamental planting in this state and for windbreaks in the dry climate of the West.

Planting Trees and Shrubs.

As already suggested, rely mainly on the trees and shrubs that are native of the locality. From the woods, fields, meadows and streambanks, transplant them to the place where they are wanted and plant at once. They are hardy and adapted to the climate and, if properly planted, can be depended upon to grow and to give a permanent effect. Kinds that are not native and that are desired must be secured from an outside source.

When buying trees and shrubs from the nurseryman, ask him to supply specimens of good quality and of medium size for the variety. When the trees are received from the nursery, plant them at once, or if that cannot be done, heel them in so that the roots will not be exposed to the air, and leave them there until it is convenient for planting. This practice is particularly necessary in the care of young evergreens. By heeling-in is meant the temporary covering of the roots of plants in order to preserve or protect them till in permanent quarters. Plant in spring. Very large trees should be moved only in winter.

When planting dig the hole large enough to take in the roots without cramping. Have the hole as large, if not larger, at the bottom than at the top. Do not plant too deeply. Set at about the same depth as the trees stood in the nursery. This may be determined by the markings of the earth at the bottom of the trunk. Allow about two inches for settling.

Work the fresh earth around the roots and under them. Shake the tree backwards and forwards to fill all the spaces, then tramp and pack the soil firmly layer by layer. Air spaces cause decay and eventually death. Plant in the evenings or on damp days. If the trees when set are exposed to strong winds or to injury by animals, it would be well to tie them to stakes and to protect them by means of tree guards.

The next article of this series will give a list of the most desirable ornamental shrubs and roses with suggestions on care, pruning and management.

A good site for an orchard has good air drainage. Slopes of land that are higher than the surrounding country are desirable.

In pruning an old orchard cut out all "water sprouts" that are not needed to fill vacant spaces. Water sprouts, as a rule, will not bear fruit for several years, but by bending them, back, or in some other way checking their growth, they can be made to bear the second or third season. These water sprouts may be trained to fill vacant parts of the trees, and when left should be headed back for at least one-third of their length.



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These six Everblooming Rose Bushes are from the famous nursery of the American Rose Company, Springfield, Ohio. They are the best variety we could obtain. The plants are perfectly hardy and grow with remarkable vigor and have rich, fresh, green foliage with large, bold flowers of a great variety of beautiful colors and delicious fragrance.

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RED DOROTHY PERKINS—An ornamental climber which is nearly evergreen and its graceful pendulous habit will place it first among pillar roses. Bloom is produced in great clusters; each individual rose being perfect in form and very double, the color being deep intense scarlet crimson.

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HORSE BREEDING AND RAISING

A HISTORY OF SOME BLUE BULL "QUITTERS."

Editor, Rural World:—It may be dry reading to some people to wade through a weary lot of statistics of trotting and pacing races, while to others no form of amusement appeals so strongly. Here is the story of Jennie, by Willington, son of Black Hawk Morgan, owned by J. W. Smithers of Washington Court House, Ohio, as shown by the year books, in the performance of her daughters, all bred by him. In 1886 he bred this gray mare, to Phillip's Blue Bull, son of Blue Bull, 75 and Belle Phillips by Wilgus Clay. (This, according to "Volunteers" of the Horse Review, is a family of quitters, founded by Blue Bull 75, a pacer of no known breeding, that lived and died at Rushville, Md.) This son was registered as Blue Bull 18441, and is the sire of one trotter and three pacers, three sires and eight dams.

Belle Phillips was bred the next season to Bayard 53, and produced Piloater 13595, sire of two trotters and one dam, bred by O. Whitson, of New Burlington, Ohio, who at the time had Bayard 53 and a band of brood mares from Langdon Stud Farm, in New Hampshire, among them, Kitty Morrill sent out to breed to Bayard. Whitson bred Piloater when he was three years old to Kitty Morrill, and for this, lost Bayard and the brood mares.

In 1887 Jennie to Blue Bull 18441, foaled a bay filly called Alice M., 2:14½. Mr. Smithers still owns her and a number of her produce. She made her first start July 26, getting third money. On August 8, 1894, in three-minute class, for \$300, she won in straight heats, best time 2:24½. Her next start she was distanced, in first heat, 12 starters. On August 23, she won in 2:20 class, second, third and fifth heats; September 26, with 13 starters, she was outside the money. In 1895, July 26, she was outside the money, ten starters; July 17, third money in 2:17 class; August 21, 2:17 class, third money, eight starters; October 11, 2:15 class, straight heats; October 4, 17 class, second and third heats and first money, eight starters; August 15, third money in 2:15 class.

October 9, 1896, she won the 2:15 class in straight heats; October 23, third money in 2:15 class; October 16, 2:14 class, straight heats, eight starters.

June 22, 1897, 2:14 class, second money; July 3, 14 class, outside the money, nine starters; July 21, seventh place, 17 starters; August 5, seventh place, race won by a granddaughter of Blue Bull, 75, ten starters; August 9, fourth money, eight starters; September 10, 2:14 class, last three heats; August 27, fourth money, nine starters; September 3, outside money, seven starters; August 11, first, fourth and fifth heats, 13 starters; October 8, third money in free-for-all. September 16, fourth money in free-for-all; October 16, outside the money in 2:13 class.

In 1898, July 19, 2:15 class, fifth, sixth and seventh; August 11, fifth place, 12 starters; September 16, second money in free-for-all; August 26, third money in 2:14 class; October 7, third money in 2:14 class; October 15, won second and third heats in the only race that she ever won a heat and did not win the race; September 8, second money in 2:15 class.

In 1899, September 21, fourth money, 2:15 class; September 15, 2:15 class, last three heats; August 24, outside the money in 2:11 class; September 28, second money in free-for-all; October 25, outside the money in 2:14 class, 12 starters; September 2, 2:14 class, straight heats; October 14, outside the money, in 2:13 class.

Here is a quitter, raced with only quarter-boots, for six years, still owned by her breeder and called a hand-

some mare, started over 40 times against all kinds of pacers, with or without hopples. Jennie, her dam, in 1892 was bred to the great sire, Bobby Burns, sire of 38 trotters and 95 pacers, and produced the gray mare Mammie A., 2:16½, who made three starts as a 3-year-old, won one heat and second money and was twice outside the money. She won five heats in two years, and one first money. As a 4-year-old she won one second, one third, three starters and once outside the money. As a 5-year-old in three starts, two fourth and once outside the money. As a 6-year-old, out as a trotter, won two heats, two seconds, one third and outside the money in seven starts. At 7 she was still out as a trotter; won one race, two fourths and twice outside of the money. At both gaits she started less than 20 times and won two races.

Jennie's third pacer was by Wilkesview, sire of seven trotters and seven pacers, bred by Gen. B. F. Tracy, sired by Kentucky Wilkes, dam Abbie, 2:26½, by George Wilkes; second dam, Mattie Wilder, by American Clay 34; third dam, by Smith's Sir William; 4th dam, by Fisher's Highlander.

Otta B., black filly, started six times, won one race, a record of 2:19½, and stopped.

That is the race history of Jenny's daughters to date. As matrons, Alice M., the quitting Blue Bull, has to her credit the black mare Purliss, 2:28½, by Girdle's son of Sphinx, out of Bliss, 2:21½, the sporadically-bred mare, by Bayard, out of the pacer, Dolly Hazard, by Sam Hazard. She should not, but she does, breed on at the trot, and was a trotter herself. Her son, Sirilis is the sire of three trotters and two pacers, at 2 years of age, if living.

I am told that Alice M., 2:14½, is not showing her age, at 28 years and is booked for an entry into the great brood mare list.

It is unfortunate that according to "Volunteer," Peter the Great and J. Malcomb Forbes (4) 2:08, are bred in sporadic lines and can not be useful in propagating trotters. Sporadic rules are inflexible, and those who have not had the opportunity to learn, that a close up-pacing cross is sporadic breeding might look to Peter Voto, 2:03½, out of a pacer by a pacer; therefore, tabbooed.—L. E. Clement, Pierce City, Mo.

PERCHERON HORSE BUSINESS FLOURISHING.

Editor, Rural World: I know that you will be interested in knowing that the trade in Percheron horses shows an appreciable increase in spite of war, foot and mouth disease, and drop in prices on cloven-hoofed animals, which depressed trade in general.

During February, 1914, the Percheron Society of America cleared 1101 transfers; for February, 1915, 1192 transfers. Trade so far in March shows steady gains.

Importations of pure bred draft horses from abroad, amounted to 9,103 head in 1911, 1912 and 1913. This made an average of about one and one-half million dollars' worth of breeding draft horses annually, for which American gold was spent abroad. These importations are now wholly shut off and probably will be for years to come.

About eight or nine thousand American-bred Percherons are now annually produced and recorded. The registration of pure-bred draft horses of the other draft breeds—Clydesdale, Shire, Belgian, French draft and Suffolk—amounts to approximately 4,000 animals annually, so that only 12,000 to 13,000 pure-bred draft American-bred horses are being produced annually, and recorded. As the sex runs about half and half, this means that but 6,000 pure-bred draft stallions of all breeds (approximately) are now being produced annually. This is a small number in proportion to the 23,000,000 horses owned in the United States, and it is inevitable that prices must rise on good pure-bred draft sires of any breed.

The marvelous gain in exports of horses is the most marked development of the general trade. Total exports of horses from the United States

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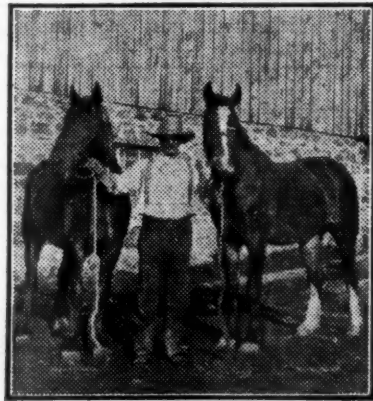
to other countries (per data supplied by the Bureau of Foreign Commerce, U. S. A.) amounted to but \$1,286,369.00 for the last five months of 1913. During the last five months of 1914 exports totaled \$15,439,604.00, a gain of more than \$14,000,000.

There is every indication that the most astounding rate of increase in value of horses exported will continue. —Wayne Dinsmore, Secretary, Percheron Society of America, Chicago.

EFFECT OF WAR ON EXPORTS OF HORSES.

During the four months September to December, 1914, inclusive, about 75,000 horses were exported from the United States. In addition to these several thousand more have been purchased for export by the agents of the warring nations. It has been feared by some that there would be such large numbers exported as to cause an acute shortage of horses in this country. There is, however, no apparent immediate danger of this.

The 1910 census gave 3,182,789 as the number of horses not on farms. There has probably not been any appreciable decrease in that number



A Pair of Two-Year-Old Drafters.

since then. That number added to the 21,195,000, the number estimated by the Department of Agriculture, on farms January 1, 1915, makes a total of over 24,000,000 horses in this country, and we could sell two or three times the number already exported without there being an appreciable shortage of work horses. Three times the number exported during the last four months of the past year, or 225,000, would be less than 1 per cent of our horse stock. Furthermore, the kind of horses which have been purchased are for the most part very mediocre animals, which would ordinarily sell for less than \$100 per head and are a class of which we can well afford to be rid. But a small percentage of the animals exported are mares and most of these are doubtlessly either old mares or non-breeders.

The big demand for horses will probably occur after peace has been declared. At that time the countries now at war, with the exception of Russia, will no doubt be very short of horses for their agricultural and other work. According to the best information obtainable European

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Russia had, prior to the outbreak of war, about 25,000,000 horses, and is the only country having more horses than the United States. This country and Russia together have 50 per cent of all the horses in the world. The world's stock is estimated to be about 100,000,000. A very large number of the horses in Russia will be destroyed in the war and the remainder will no doubt be needed by Russia for her own agricultural and other work.

The demands on this country, which has one-fourth of the world's supply of horses, will, therefore, be large and will probably continue for a number of years, for the rehabilitation of the depleted horse stock of any country is a slow process. This country, however, will be in position to meet this demand if the farmers owning good mares will see that they are bred. The owners of such mares should see that they are bred to high-class stallions and produce the kind of stock for which there is always a good market. The production of superior animals of any kind is generally profitable, while the production of inferior ones is seldom so.

ABOUT TROTTERS AND PACERS.

The pacer, Independence Boy, 2:01½, is going sound enough for road racing this winter and may be sent to the track this spring.

Joe Hartford, the well known harness manufacturer of Chicago, Ill., has invented a pair of goggles for use over a horse's eyes, the same as drivers use, as he claims that flying dirt bothers a horse just as much as it does his driver.

It is reported in a Maritime paper that the Province of Nova Scotia is in the market for a high-class stallion for the government breeding farm. They have asked for a price on Axtein, 2:11½, by Axworthy, 2:15½, which has been placed at \$25,000.

The Detroit Driving Club has announced that the Merchants' and Manufacturers' \$10,000 stake, has been changed from the 2:14 to the 2:08 trotting class, and the Chamber of Commerce stake, the principal pacing event, has been moved from the 2:13 to the 2:07 class.

CATTLE FOR BEEF AND FOR MILK

LIVE STOCK AT PANAMA-PACIFIC EXPOSITION.

The department of live stock, of the Panama-Pacific International Exposition, makes the following announcement with regard to the possibilities of importing cattle, sheep and swine from states that have been infected with foot-and-mouth disease:

There are 16 or 17 states that have been visited with this disease; the rest of the United States has not been troubled. The department of live stock of the exposition, will not ask federal or state quarantine authorities to do anything that will jeopardize the health of the live stock in any part of the United States.

The cattle competitions in live stock at the Exposition do not begin until October 18. Sheep and swine begin November 3. Long before these dates the foot-and-mouth disease will be effectually stamped out. Dr. Chas. Keane, California state veterinarian, has made the following rule:

"No cattle, sheep, or other ruminants, or swine, will be permitted to be shipped for exhibition purposes at the Panama-Pacific International Exposition from any area in which foot-and-mouth disease has been found, or from areas contiguous thereto until a responsible length of time has elapsed since such territory has been declared clean by the United States Department of Agriculture and state live stock sanitary officials."

Any negative action by individuals, associations, clubs or states at this time would be premature. There will be a truly great live stock show at San Francisco and the wise breeder will get ready for it.

TRAIN THE COW IN THE WAY SHE SHOULD GO.

When I was a boy, at home, it fell to my lot to do the milking. Across the road from us lived Dr. Crosby, who had a cow I had always admired, although she seemed to be a confirmed kicker. I was milking a very quiet cow, which in every other respect was much inferior to the Crosby cow. I proposed an exchange. The doctor said he would make the exchange if my father was willing. I spoke to father and he said I had to do the milking and if I wanted to chance it, to make the exchange.

I brought the Crosby cow over, tied her to the fence, took a long hitching strap, tied it around her near front ankle, dropped it over her shoulder, put a loop in the end and my foot in the loop. The first attempt she made to kick, I took up her foot so suddenly that she came down on her knees. The second time, I served her in the same way. About the third time, I milked her. When I threw the strap over her shoulder, she got down on her knees and remained in that position until I finished. After that I did not even tie her up, but went to her as I would to any cow.

One morning, while milking, the doctor came up behind me and remarked on my getting her so quiet. She did not kick, but ran bellowing across the common, when she heard his voice, and left me sitting there with not as much milk as I would have had, if she had not left so suddenly.

Some cows object to abuse as much as does a well-bred horse. It is seldom that kindness will not overcome acquired vicious habits in either one of them.—L. E. Clement, Missouri.

A HISTORY OF HEREFORDS.

The American Hereford Cattle Breeders' Association has just issued a 40-page booklet entitled "Herefords: A Short Story of Their Early History." Numerous requests have been received by the association from

breeders, instructors and students in agricultural colleges, public school teachers, county agents and farm demonstrators for a condensed history of the Hereford breed, and this booklet was prepared to meet these requests. In addition to a history of the breed from its origin until it was firmly established in this country, the booklet contains the chapter on Herefords from farmers' bulletin No. 612, recently issued by the U. S. Department of Agriculture; a review of the four-year breeding and feeding experiment with the beef breeds conducted by the Kansas experiment station at Fort Hays; and the official score card for Herefords adopted by the association. Copies of the booklet will be sent free on application to the American Hereford Cattle Breeders' Association, 1009 Baltimore Ave., Kansas City, Mo.

CATTLE LOSSES ON CORN STALKS.

Many reports have reached us recently regarding cattle that are dying on stalk fields. In those cases in which we have made an examination, we find that the fields contain little or no water and that the animals gorge themselves on the corn stalks with insufficient moisture to assist in proper digestion. The postmortem examination has revealed a paunch filled enormously with dry food. These animals often die within a few days after having been turned on the field. In each case removal from the stalks or the addition of a more succulent ration has been sufficient to stop the losses.

We are inclined to think the whole trouble due to engorgement with dry

CREAM OF THE DAIRY NEWS

GRADE DAIRY HERD AT PANAMA-PACIFIC EXPOSITION.

Great expositions are given for the display of human accomplishments. These may be the work of man's hands as shown in the arts and industries or they may include the greater work of his mind in the adaptation of nature's laws to the production of better crops, better fruits and better stock.

Premiums are for the pure bred in apples, in wheat or in cows, and yet it is not the pure bred that comes most closely in touch with our daily lives. The pure bred supplies our breeding stock, without which there would be deterioration and loss, and without which the grade could not exist. And yet it is the grade that gives us our daily meat and milk, and forms the basis of the live stock industry. Exceeding all others in numbers, supplying milk which is the only universal human food, and without which mankind would cease to exist, manufacturing the grass of the field into a most valuable farm product, and leaving the land richer for her presence, the grade cow gives much and receives little.

In recognition of her predominance



A Well-Built Barn is a Joy to the Dairy Farmer.

food with insufficient water supply. During the winter animals do not drink as much as they should owing to the fact that the water is cold and scarce. We are of the belief that the old "corn stalk disease" could in some measure be attributed to this cause.—I. E. Newsom, Colorado Agricultural College.

FEEDING MOLDY SILAGE.

Avoid feeding decayed or moldy silage to live stock.

In some instances the feeding of such silage has caused the death of horses and severe cases of scouring in cattle.

In most cases the method of filling the silo has had much to do with the spoiling of the silage; hence, little can now be done to prevent the damage to the feed.

Experienced feeders of silage throughout the state are urging their neighbors to avoid feeding moldy or decayed silage to any class of live stock.

Where without the presence of mold the silage is in an abnormally heated condition the adding of water may help to check decomposition. Farmers experiencing any difficulty in the feeding of silage to their stock are invited to communicate with the officers of the Experiment station, Madison, where special consideration has been given to the feeding of silage to live stock.

Sunshine is very necessary to the vigor of all young, growing animals. It is an excellent germicide, and for that reason serves to purify the surroundings and to keep the young calf healthy. It is always well to place the calf pens in a part of the building where plenty of direct sunshine may enter.

in numbers and of her great utility value, the Department of Live Stock of the Panama-Pacific International Exposition will offer a special tribute to the grade cow. A diploma will be awarded for the herd of four cows best suited for dairy purposes. These cows will be judged on all the points necessary to the make-up of an ideal dairy cow, and not as the representatives of the breeds whose characteristics may be most strongly shown in them. Nor will this be a milking contest in any sense, but it will be for the purpose of showing to the assembled nations that type of cow upon which the farmers of the world depend for a most important part of their revenue, and it is expected to show that the more nearly the grade approaches the pure bred, the more valuable she is.

PRODUCING GOOD CREAM.

To obtain improved quality of products in the dairy industry, the producers of the raw material and manufacturers of the finished products must co-operate to a greater extent than perhaps is necessary in any other phase of agriculture. If the cream producers fail to do their part the manufacturers fail. No one can manufacture good butter from old stale cream. If a good quality of fresh cream is produced, the dairy farmers have a right to expect and even demand the highest possible market price.

By producing fresher and better cream, the quality of butter can be improved so that it will sell on the large butter markets in competition with butter from other states at a higher price, and the demand for it will be increased. By paying close attention to quality the profits from the dairy industry in the state of South Dakota can be increased by

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several hundred thousand dollars, and at the same time add to its favorable reputation.

The dairy farmers are at the foundation. They can do more for the improvement of the raw dairy products than any others, but to get maximum improvements, concerted co-operation between the producers and manufacturers is necessary.

Sanitary surroundings at places where cream is produced and handled, keeping the milk and cream cold, and getting the cream to the factory while it is fresh, are three essentials to keep in mind to improve present quality of finished dairy products.—J. M. Fuller, Experiment Station, Brookings, N. D.

TELLS HOW TO HANDLE CREAMERY WASTE.

Creamerymen who have had trouble in satisfactorily disposing of the sewage from their factories, should send for and read the bulletin entitled, "The Disposal of Creamery Sewage," just published by the Agricultural Experiment Station of the University of Wisconsin.

It describes in detail a plant by means of which the waste from a large creamery and cheese factory has been disposed of for several years.

The purification of sewage, according to the authors of this bulletin, is accomplished by reduction and oxidation. The reducing process of the solid matter in sewage is carried on by means of fermentations. These decompose the sewage into easily consumed material, the process being similar to that of whittling a block of wood into shavings. The soil of that filter bed, which receives the sewage after it has been thoroughly fermented, furnishes the oxidizing or the burning process whereby the decomposed material is consumed. The first part of the process requires the exclusion of the air and the second an exposure to as much air as possible.

A good metal strainer is better than cheesecloth for straining milk unless care is taken in keeping the cloth clean. It takes boiling water and sunshine to put the "bugs" out of business when they are in the strainer cloth.

A clean, light, well-screened, well-ventilated milk house is absolutely necessary to keep milk in good condition. Milk cannot be properly looked after either in the house or stable. Remember, the length of time milk remains sweet depends on the care it receives. Keep it clean and cool and covered.

The principal reason why a dairy cow increases her milk flow when she is turned out to pasture in the spring is that she is receiving a succulent feed. Thus, if we wish to secure a large and persistent flow of milk during the winter months, we must feed some succulent feed that will take the place of the pasture grass of summer. The two most common succulent feeds for winter are silage and roots. Experimental work has proved that the silage yields more heavily per acre, costs less, and gives equal results from similar weights of dry matter.

SHEEP & SWINE FOR MOST MONEY

"IMMUNIZED" BREEDING SWINE— A HOG CHOLERA PROBLEM.

Editor, Rural World:—There is, in some of the hog raising states, a false "trade demand" for immunized breeding hogs, among farmers whose premises are infected with hog cholera germs, and who do not like to risk bringing in new breeding stock on account of the danger of these hogs getting cholera. I think they overestimate the difficulty of getting rid of the hog cholera germs on their farms. Serum companies have stimulated among breeders a notion that it is to their best interests to immunize their sale hogs by what is known as the simultaneous injection of "hog cholera serum" and "hog cholera virus." The first is a protective substance and the latter a disease-producing substance. This method is used in order to give the hogs a "permanent immunity." But the permanency of immunity cannot be depended upon in all cases unless a tolerably well developed fever is produced; and this in some cases is followed with bad results, and the disadvantages overbalance the advantages.

Every breeder knows that the best breeding animal is one that has never had disease, one that is properly bred and properly fed and properly cared for in every way from the time it is farrowed up to the time of sale, and if the sow or boar can be put in the sale ring without ever having been treated with hog cholera "virus" there is no doubt but the animal is a better breeding animal, than one that has had disease; whether it was contracted naturally or produced artificially by inoculation. The observations of many farmers indicate that the reproductive functions of the breeding animals are sometimes injured by natural cholera or by the serum-virus vaccination. And as the injury is just as liable to fall upon one of the very best bred animals, it is desirable to avoid all risks in this direction, and to turn more to the eradication of the disease from the farms, rather than to try to immunize breeding stock so they can live on infected premises.

The field agents of a number of agricultural papers, whose business it is to visit the breeders and look over their herds, are impressed with the fact that the men who resort to serum-virus immunization so as to meet the false trade-demand for immune hogs, are not supplying as good looking stock as they formerly did, or as other swine breeders who are not trying to "immunize" their hogs, but are trying to fit their hogs in the best possible way to give good service to their patrons. The "immunized" hog is of course better than a dead hog, but many breeders have found that it is not necessary to resort to the serum-virus method for protecting their herds, and the tendency is to get away from this bad practice, that certainly stunts hogs in some cases, and in others has rendered some of them sterile or less productive.

I have at hand a personal letter from one of the best known auctioneers in the country, who lives in an adjoining state. I am quoting, without his knowledge or consent, a portion of his letter bearing upon this matter. For obvious reasons I do not mention his name. He says:

"I have put in the last month with hog men in this state—(an adjoining state). Naturally hog cholera and its treatment was talked quite extensively, and if I can catch the drift at all I feel sure that farmers are more awake, than ever before, to the importance of sanitation as a factor in hog cholera control work. I have had pointed out to me by some breeders of registered stock that it was absolutely necessary that they immunize their hogs, in order to make good

sales; and at some sales, which I have conducted, that did not go as well as they should, the reason was directed by some to the fact that the hogs were not immune. We have had this happen, and the very next day after such a sale, under practically the same conditions, the hogs not being immune either, a splendid sale was made. The facts are that the best sale I made in the state this year was for a man who under no circumstances would allow virus to come on to his place. During the last four years this party has had cholera on the farms adjoining him, but has escaped the disease. He protected himself in each instance with serum alone and sanitation. I visit his place two or three times each year, and I can truthfully say that one making a visit there will always find everything in first-class condition, both as regards the condition of the animals and the sanitary conditions of the premises."

(Signed)

It is my opinion that the time will come in a very few years when no man will think of immunizing his hogs by the "simultaneous method;" and all will protect themselves in the manner mentioned above—by sanitation and the use of serum alone, whenever vaccination may be required. You will note, however, that in the case of the individual breeder mentioned above, he was exposed to cholera which was on adjoining farms. This man's herd was in constant danger from the disease, by the carrying of the infection by dogs, pigeons and other carriers, and so demonstrated the value of his methods. Under such exposure, however, severe losses might happen, in some cases, in spite of the careful attention that was given. If he could have only taught his neighbors how to do the same things so that they too might be free from cholera, and they in turn would enlarge the area, by encouraging their neighbors, further on, to do the same thing, cholera could be gradually pushed back and off the map. Hence co-operation and instruction and better hog farm management are essential to good results in eradicating the disease.

The Dominion of Canada has regulations against the importation of hogs that have been vaccinated by the "simultaneous method." They fear the introduction of the disease into their country. The fact that hogs have been vaccinated, is evidence that they come from infected premises, or that neighboring farms are infected, and no breeder can ship hogs into Canada if the disease is within five miles of his place. Each breeder's farm, therefore, should become a center of a clean-up area which would have a radius of at least five miles so that he could, not only ship breeding hogs to Canada, but to other sections of the country where they do not want to introduce the disease, and to his neighbors in the next county as well. The breeders of the country can do great good toward eradication of hog cholera if they will banish the "serum-virus" methods and take the lead in their neighborhood in getting the farmers to apply the simple and rational methods of sanitation and serum alone, in a well organized way, such as is being advocated and being put into operation by the university through its agricultural extension department.—Dr. J. W. Connaway, Veterinarian, College of Agriculture, University of Missouri, Columbia.

Sheep are defenseless creatures and are often injured when running with other stock.

Wool is bringing a better price. It will not be apt to go much lower, as long as world conditions are as they are.

Pure water is the only kind a sheep ever ought to have. After it has stood round it is not healthful and is used at great risk.

Don't worry if the lamb is black at first. Often the color will fade out and the little fellow be as white as the other lambs.

The floor of the sheep pen should be dry and level. The yard connected should be roomy so the flock can exercise freely. The flock should never be yarded with cattle or colts.

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J.C. DAVIS
WHITE OAK MO.
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through thickest of leather. Awl comes complete with three needles and reel of waxed thread, ready for use the moment you get it. Full directions with each outfit. So simple a child can work it.

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splendid blades of very fine cutlery steel. This knife is built for business and is strong enough and sharp enough to rip a cotton bale or cut a sapling. Measures 3½ inches when opened. Bone handle. Sent by mail, prepaid.

No. 4. BARBER'S RAZOR, imported from Germany. Guaranteed. Made of selected steel, hand-forged, extra hollow ground, ½-inch polished blade, black

horn handle. With ordinary care will last for years, and won't pull. You will find this razor nearly the equal of any \$3.00 razor. Sent prepaid, ready for immediate use. Extra good value.

No. 5. ONE DOZEN SILVEROID TEA-SPOONS, 6 inches in length, made of solid silveroid (pure white metal) which will not tarnish, and lasts for

years. The edges are handsomely beaded after the design of the most expensive spoons made. Made for every day usage and keep their brilliant finish.

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St. Louis, Mo.

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For the Two Dollars I have pinned to this coupon renew my subscription for three (3) years, and send me FREE and prepaid the article named below.

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THE HOME CIRCLE

AND THE KITCHEN

THE VALLEY ROAD.

(Tune: Annie Laurie.)

It fills our souls with rapture
To sing our little ode,
For how sweet, oh, sweet, the
mem'ries
Of the old valley road,
Where nature reigns supreme,
And hath her charms bestowed—
Oh, there is none more lovely
Than the old valley road.

How well we now remember
Where many times we rode,
Mid the perfume of the flowers
Along the valley road.
There sweet birds love to sing
And there make their abode—
For fair nature smiles her sweetest
Upon the valley road.
St. Louis. ALBERT E. VASSAR.

THE MOTHER AND HER CHILDREN IN THE HOME.

Dear Readers of the Home Circle:—
In a recent issue of the Rural World
a mother has written quite an inter-
esting letter, on "Children Should Be
Seen, Not Heard." She says, "no
duty is more insistent than to do
what lies in our power to make our
children and our children's children
men and women who will be an orna-
ment to any community and valued
citizens of any country they may
choose as their home." Isn't this the
duty of every mother? Can it be
overlooked?

In these busy days it seems that a
great many mothers do not fully
realize the responsibility and sacred-
ness of their position. By assuming
political duties, they say they are go-
ing to make great reforms in our
government; but if every mother
would strive to train her children in
the home to become useful men and
women, what a reformation we should
have.

It is true that the child's training
in the home has been notoriously
neglected. Boys and girls are permit-
ted to grow into manhood and wom-
anhood without having any definite
aim in life, without the training that
is essential to success in any work
that they may choose in life, and the
results are that many of them sink
into vice and crime, lured on by pleas-
ure which lasts only for a season
then leaves its victim to the fate of
a life of idleness and sin.

There is no responsibility greater
than that of the home, and the most
important factor of the home, as re-
lated to the children, is "mother."
What an opportunity for the mothers
to mould the characters of their chil-
dren so they will be "an ornament to
any community that they live in, and
valued citizens of any country they
may choose as their home." They
will cherish no memory greater after
they become men and women as that
of "mother." Her influence on their
lives will remain with them long after
they have forsaken the "hearthstone."
W. T. Harris says "If I were asked
to name one product of vice and

The Home Circle is a meeting place
for weekly gatherings of the Rural
World family. All of its members are
invited to meet here in correspondence
and good fellowship. Send lots of
letters and get really acquainted.

The Kitchen is a factor in the Home
Circle that no one can do without.
Help to make it helpful, by sending
for publication suggestions on how to
make and do the things that are
made and done in the kitchen. Tell
others your ideas and experiences.

crime that would soonest touch the
hearts of all good people, I would say
a neglected child. Every case of
vagabondage has its root in some
neglected child."

When we come face to face with
these facts, is it not high time for us
to give our children better training in
the home? The Sunday school and
the day school are very important in
their training, but they can never
fully take the place of training in the
home. When we combine and utilize
all of these agencies for the training
of our children, a great reformation
will begin that will give our country
a better citizenship and a better gov-
ernment.

Mr. Grady, in one of his famous
speeches, said: "Let us in simple
thrift and economy make our homes
independent. Let us in frugal in-
dustry make them self-sustaining.
Let us make them homes of refine-
ment in which we shall teach our
daughters that modesty and patience
and gentleness are the charms of
woman. Let us make them temples
of liberty, and teach our sons that an
honest conscience is every man's first
political law, that his sovereignty
rests beneath his hat, and that no
splendor can rob him and no force
justify the surrender of the simplest
right of a free and independent citi-
zen. And above all let us honor God
in our homes—anchor them close in
His love; build His altars above our
hearthstones, uphold them in the set
and simple faith of our fathers and
crown them with the Bible—that book
of books—in which all the ways of
life are made straight and the mys-
tery of death is made plain. The
home is the source of our national
life. Back of the national capital and
above it is the home. Back of the
president and above him stands the
citizen. What the home is, this and
nothing else will the capital be. What
the citizen wills, this and nothing else
will the president be."—B. A. J.,
Alabama.

TWILIGHT THOUGHTS—"WHAT IS HOME WITHOUT A MOTHER."

Dear Home Circle:—It is now long,
long ago since I had a mother to look
up to. I was in my 'teens when she
left us. But when alone during twi-
light hours I see her sitting in her
special chair telling brother and I
fair tales, my brother sitting on a
hassock on one side of her, I on the
other side on another hassock, our
arms nearest mother resting on her
knee. When the stories became in-
tense we would both kneel on our
seats drinking in the thrilling tale
from her lips as only children can.

When she did not tell stories, she
sang, and of course her voice was the
sweetest voice in all the world. I still
hear her singing and remember the
song about the shepherd boy, and the
boy whose home was where the cit-
rons bloom and where he longed to go.

On rainy days mother was an ideal
playmate. She showed us how to
model with clay. We made wonderful
chickens for which we found feathers
to cover them; sheep were covered
with fleecy cotton and a little ribbon
adorned their necks.

Mother knew endless games for
children and was our greatest play-
mate. I inherited her doll house and
doll kitchen furnishings; everything
was of the best quality, or it would
not have lasted so many years. Mother
taught me how to use each kitchen
utensil and thus I received my first
lessons in housekeeping.

Can you wonder, dear reader, that I
think of mother in the twilight hour?
When I think of those days I realize

that mother was a wonderful woman.
She knew everything about fancy-
work, or sewing, and helped my fa-
ther with his literary work. She was
a great reader, and she was of a
sweet and lovable disposition. She
was the kind of mother one longs for
when ill. She made us forget illness
by ever new diversions, and a some-
thing inexplicable unless it was her
womanliness.—Claire V. D'Oench, St.
Louis.

WOMAN'S INFLUENCE.

To the Home Circle:—So great is
the influence of a sweet-minded wom-
an on those around her that it is
boundless. It is to her that friends
come for comfort in seasons of sor-
row and sickness. One soothing touch
of her kindly hand works wonders in
the feverish child; a few words let
fall from her lips in the ears of a
sorrowing sister do much to raise the
load of grief that is bowing its vic-
tim down to the dust in anguish.

The husband comes home worn out
and with the pressure of business and
feeling irritable with the world in
general; but when he enters his cosy
home and sees the glow of the bright
fire and meets his wife's smiling face,
he succumbs in a moment to the
soothing influences which act as the
balm of Gilead to his wounded spirits
that are wearied with combatting
the stern realities of life.

The rough schoolboy flies in a rage
from the taunts of his companions to
find solace in his mother's smile. The
little one, full of grief, with his own
large trouble, finds a haven of refuge
on its mother's breast.

One might go on with instance after
instance of the influence that a
sweet-minded woman has in the so-
cial life with which she is connected.
Beauty is of insignificant power when
compared with hers.—Mrs. H. M., Il-
linois.

SOMEBODY GETTING RICH—IS IT THE FARMER?

Dear Home Circle:—It gives me
great pleasure to converse with the
Rural World family. I received a let-
ter from a member of the Rural World
family who lives in Cobb, Ky. He
informed me that he saw one of my
articles in the Rural World and that
he lived in this section in 1872, forty-
three years ago. He wanted to know
about this country and asked about
certain men who lived here in 1872,
and he mentioned their names. There
is but one of those men living now,
and he is a veteran confederate sol-
dier who served in our civil war of
1861-1865. This man lost his right
leg; it was shot off below the knee.
He has an artificial leg.

We have been grading apples in the
apple house, Grimes Golden, York Im-
perial and Ben Davis. We like the
Grimes Golden best.

Good second grade apples sold here
last fall from 10 to 25 cents a bushel,
and thousands of bushels rotted on
the ground under the trees. I know
of men who wouldn't buy apples for
their children, but would spend their
money for tobacco and whiskey.

I was in a grocery store not long
since and saw an old man and woman
call for some bacon. The clerk
threw down some breakfast bacon
and said the price was 25 cents a
pound; live hogs are selling for six
cents. Seems like somebody is get-
ting rich. Is it the farmer who is
feeding 80-cent corn? Is it the pack-
ers and commission men? I am cer-
tain it is not the farmer who is get-
ting rich and it is not the consumer.
I can't believe the consumer can get
fat, because he can't afford to buy
enough to make him fat.

Well, what about the wheat proposi-
tion? Farmers sold wheat last sum-
mer and fall for 70 cents to \$1 a
bushel and after speculators got the
wheat cornered it went to \$1.65. The
farmer and other consumers are pay-
ing \$4.00 for flour. There are too
many millionaires and too many poor
people.

I can't believe that there are many

truly happy people. The speculators
who are getting rich off of the tillers
of the soil, by gambling on the farm-
ers' products and causing so many
dear children to suffer from want of
warm clothes and something to eat,
certainly can't be happy, and the
farmers and other laboring people
are paying high prices for what
they eat and wear and their clothes
and eatables are very scant. But the
farmers should not complain, for they
will not work together. They simply
let the speculators set a price on their
products and take it at their own
price. So the farmer and other labor-
ing people can not be truly happy
under such unfavorable conditions.

There is enough money and cloth-
ing, meat and bread in this world to
feed and clothe ever man, woman and
child; yet, some are living in luxury
while others are suffering from lack
of clothes and food. Our apple grow-
ers will not co-operate, so the com-
mission men are having things their
own way. I wonder when the farm-
ers will awake out of their long
slumber.

Some people expect our president to
regulate everything. Our president
no doubt is competent to instruct us,
but if we do not follow his instruc-
tions, we should not blame him for
our mistakes.—E. N. Hendrix, Mis-
souri.

POTATOES IN PLACE OF BREAD.

If wheat remains at its present
high figure or continues to rise in
price and if there is a corresponding
increase in the price of bread, scien-
tists in the United States Department
of Agriculture suggest that the ordi-
nary household will find it advantage-
ous to eat more potatoes and less
bread. With potatoes at 60 cents a
bushel, 10 cents worth—or 10 pounds
—will give the consumer a little more
actual nourishment than two one-
pound loaves of bread at 5 cents each.
The protein and fat are present in ap-
preciably larger amounts in the bread,
but the potatoes will be found to fur-
nish more carbohydrates, and more
heat units.

Carbohydrates, (starch) contribute
greatly to the energy value of any diet
and since potatoes are rich in these,
families that wish to expend their
money to the best advantage are rec-
ommended to consider whether they
cannot make a more extended use of
them. They are easy to cook and when
prepared in different ways can be
made to lend variety to the winter
diet when green vegetables are hard
to obtain. Like other foods relatively
rich in carbohydrates, however, pota-
toes should be eaten with foods cor-
respondingly rich in protein, such as
milk, meat, eggs, etc., and with foods
like butter, cream and meat fat to
supply the fat that the body needs.

Under normal conditions in Europe
and America the potato ranks next to
bread as a carbohydrate food.
If prices change sufficiently to
make it desirable from a financial
point of view there is no scientific rea-
son why potatoes should not be sub-
stituted to a great extent for bread.
In addition the potato, like many fruits
and vegetables, helps to neutralize an
acid condition in the body. This is
another reason for its being eaten in
combination with meat, fish, and other
animal foods.

A NICE BREAKFAST DISH.

Take two cups of left-over rice; beat
into it three eggs, one heaping table-
spoonful of sugar, a little salt; grate
into it a little nutmeg. Fry in butter
like scrambled eggs.

This dish can be relished by frying
an onion in the butter and omitting
the nutmeg, if so desired.—Claire V.
D'Oench.

A few drops of lemon juice in the
water in which the face is washed
removes all greasiness and leaves the
skin fresh and satiny, as well as mak-
ing it fairer and clearer. A little
lemon juice rubbed over the cheeks
before retiring and allowed to dry
will remove summer freckles and
whiten the skin, and, if persisted in,
will eventually carry off all blemishes
of the complexion that are not caused
by impure blood or other internal
trouble.

Big Sleeping Doll FREE



This fine sleeping
doll is nearly two
feet tall, and is all
the rage. She has
slippers, complete
underwear, stock-
ings, etc. Dress is
very prettily made,
half length, and
trimmed with lace;
also has a little
chatelaine watch,
with fleur-de-lis pin.
You can dress and
undress this doll just
like a real baby. Has
curly hair, pearly
teeth, rosy cheeks,
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goes to sleep just as
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religious pictures at
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tures until sold, and
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prise gift for prompt-
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St. Louis, Mo.

THIS
UPON
DAY
your
now,
of the
rather
er this
wn and

Treat New Neighbors Not as Strangers

To the Home Circle:—March is the month generally chosen for moving, in country districts especially, and there are very few neighborhoods that will not have one or more new families added to its population in the next week or two. How are we going to treat them? Are we going to lose or gain by them?

I will answer the questions from my own experience. We are safe in taking the "golden rule" as our guide. Suppose for instance that you had left relatives, friends and old associations for some reason strong enough to break the tie that bound you to them, and you had arrived in the new home, hungry for the sight of a friendly face, or an encouraging word, do you not think you would welcome any one who would show sufficient interest in you to call and say, "How do you do?" or "How are you?" not as a polite form of greeting, but as a hearty inquiry, which carries with it a tacit promise that if you are not doing well or if anything is amiss the caller wants to see the trouble righted.

Do not excuse yourself from your duty by thinking or saying, "I don't know anything about our new neighbors;" it is your business to go to see them. They may not need direct aid, very few need, or want that, but if they do need it, "do not withhold thy hand." One thing is sure though, if they are normal, they want human companionship; it is only the fugitive from justice or the hermit who shuns his fellow man; the one is morally deficient, the other mentally wanting. Do not think either, that you are absolved from all responsibility because your land does not join the farm of the new man, be he owner or tenant. We have neighbors who are not near in point of distance, but if they are within reach, if they are in our school district or in the circle of which our church is the radius, though they may be on the outer edge of the circle to the east and we to the west, true neighborliness should prompt us to make at least one call. Even if the new neighbors are totally undesirable, we cannot be contaminated by one visit.

I have a case in mind: A family on account of great financial losses, left their home state and came to the Ozarks. They brought with them some of their household goods which stamped them as once having some means and as being undeniably from town or city. They busily worked to get the home in order for they hoped that the neighbors would soon call and new friendships be formed, but alas, the weeks grew into months and no one set foot over the threshold besides husband and wife, until at dusk one evening a timid knock was heard; Mrs. B. opened the door to find a kindly face at last—an oldish woman with a basket on her arm, which she uncovered, almost before she could get her breath to say: "We butchered yesterday and I thought maybe you would enjoy a little sausage and some spare ribs." Mrs. B. assured her that she would indeed be glad to accept the gift and prevailed on her visitor to come in and be seated. The ice being broken, among other things the neighbor said this: "The men who helped us butcher laughed at me when I said I was going to send a taste of fresh meat to you like we used to, to new folks, and said you were from town and had fine furniture and fine manners and would laugh at me, but I see you are folks just like the rest of us and are glad to have neighbors." Mrs. B. replied that she thought no one could have "fine manners," who would ridicule any well-meant act.

From that time on, there were visits back and forth and the B.'s took their places in the activities of the community, thanks to the brave soul who acted according to the dictates of her conscience, and found the new people "just folks."

Depend upon it, friends, that is what most people are, "folks like the rest of us." Does not Kipling express this when he says: "The Colonel's lady and Judith O'Grady, are sisters un-

der the skin." And I heard Governor Major voice the same sentiment in his address at Farmers' Week in Columbia, when he said: "No matter what their position, men are only men." All of us are asking in many ways. So, I repeat again, treat your new neighbor as you would like to be treated.

As to the question, "Will we lose or gain by having new neighbors?" that depends upon the kind of people they are and how we treat them. If they are intelligent, progressive people, bringing with them right standards of living and good methods of farming, we can congratulate ourselves on having them in the community, for their example will profit us and we will insensibly be affected by them. They may not claim any leadership but we will accord it to them. If they are not qualified to teach us but are willing to learn from our experience, they are still a direct benefit to us, for the knowledge we share with others is blest and makes us wiser, too.

Do not assume because the new people are either poorer or richer than you, in this world's goods, that there is a barrier between them and you. With plenty of money one can, of course, seek friends from a distance, but nothing beats knowing that you have neighbors near at hand, who are friends, who would rejoice with you in prosperity and mourn with you in sorrow, and if you are the one who is most prosperous, make your advances to the new neighbor with double heartiness; don't impress him with the extent of your possessions. He may be sensitive and feel that you think him beneath you. Go on the principle that one man is as good as another if he behaves himself. This was the rule of life of a dear old friend who has very lately passed to the beyond, and she made everyone happy by her kindly interest in them and awake the dormant self-respect in many a "derelict," who, through evil ways, had been set aside by others as unfit and unclean.

We may not all have this gift for reforming others, but we can all welcome those who cast their lot with us, and make our association mutually helpful. In one neighborhood in a certain state, the church is the social center and when a new family comes into the community they are called on by a committee, consisting of husband and wife, who are neighbors of the new people and invited to a "reception" at the church which has been previously arranged, and there they are introduced to all and immediately feel that they belong in the neighborhood. This plan might not be practicable everywhere, but wherever there is a school house an entertainment of some kind could be arranged and the new people be introduced and all have a social time together. This would be especially easy to do if there is already an organization of some kind in the neighborhood, one which includes all regardless of creed, politics or nationality, one which can serve as a melting pot to fuse the different elements and create the pure gold of neighborly interest and brotherly love. This is one of the tasks to which every community club should dedicate itself and the reward shall be the one promised by Him who said: "I was a stranger and ye took me in."—Cena S. Cornman, Missouri.

HOW I EARN AND SAVE MONEY AT HOME.

To the Home Circle:—Thinking that saving is earning, I always make my own soap. By saving all the meat scraps, cracklings, etc., and using a few pounds of tallow, with lye obtained from the wood ashes saved during the winter, I make 20 gallons of good soft soap.

We raise our own broom corn, and get our brooms tied, for an equal division of the quantity of broom corn.

We raise sufficient vegetables for home use, make some butter to sell, also eggs, chickens, turkeys, etc., but these are usually farm assessments. For my really own I keep accounts as follows:

Crocheting hand bags, belts, collars, ties, etc., \$18.50; painting, pollow shams, throws, splashers, etc., \$6; sewing, outside of home work, \$5; quilting, \$3; cracking walnuts, \$26.18.

The walnuts are gathered as soon as the frost brings them down. When hulled and dried they furnish work from December to March. The kernels bring 20 cents and sometimes 25 cents a pound at our merchants, either in merchandise or cash.

While crocheted buttons were in vogue I purchased the wooden molds and crocheted covers on orders, making them any color desired from 20 cents a dozen up, according to size, style and thread. The other work was sold from samples by taking orders and then making the articles. There was no surplus work left on hand to eat the profits up.—Mrs. D. B. Phillips, Tennessee.

TO PREPARE AND COOK A CHICK- EN POT PIE.

Dear Home Circle:—We are to have chicken pot pie today. Kill a nice fat hen, scald and pick, singe, then wash with soap, rinse in clear water. Draw and cut off the feet, sever the legs close to the body, then divide at joints; remove wings. Separate back and breast and divide these; remove lights and any other matter still remaining; wash well through two waters.

Put to cook in the iron kettle and cook till well done. If the chicken is very fat you may have to dip some of the grease off; if not fat enough, add butter the size of a hickory nut. When nearly done add salt.

Take a pint of flour, salt slightly, add a teaspoonful of baking powder, and moisten with enough sour cream to make a stiff dough. Take this dough on the board, which has been well floured, and roll thin; cut in strips one inch wide and two inches long. Have six large potatoes pared and cut in small pieces.

Remove chicken from the kettle, then replace in it two large pieces,

then a few potatoes, then dumplings—checkerboard fashion—then chicken, potatoes, dumplings, until all are in the kettle. Cover and cook until the potatoes are done, then remove from the fire. There should be enough water in the kettle to have its pot pie quite moist; that is, gravy in the kettle.—Mrs. J. K., Arkansas.

AMBER MARMALADE.

Don't wait until late in the season before making your orange marmalade, advises Miss Oberlin of the Colorado State Agricultural College, but when the grape fruit is in its prime try this recipe: Wash thoroughly and wipe dry, one large grape fruit, one lemon and one orange, then cut the slices into small pieces. Remove all the seeds. Add three and one-half quarts of cold water and let stand over night. In the morning boil slowly until the peel is very tender. Set aside until the next day. Add five pounds of granulated sugar and boil, stirring occasionally, until the syrup jellies when cooled. This is delicious to serve on plain wafers with afternoon tea.

A good way of stiffening the bristles of hair brushes after washing is to dip them into a mixture of equal quantities of milk and water, and then dry before the fire.



GERMAN SILVER MESH BAG FREE

Oxidized frame, prettily embossed with handsome floral design; 19-inch chain. Mesh Bags are all the rage. Very handsome. Given free for selling 20 large art and religious pictures at 10c each. We trust you with pictures until sold, and give 40 beautiful postcards as an extra gift for promptness. Send name. A postcard will do. People's Supply Co. Dept. W 716 Lucas Ave., St. Louis

NEARLY FREE THIS BIG 3 1/2 FOOT TELESCOPE with Patented Solar Eye Piece

Here's a bargain. Never before has it been possible to obtain a Multi-focal telescope with solar eyepiece attachment for less than \$5 to \$10. But because we have made special arrangements with the inventor, and pay no patent royalties, and have them made in tremendous quantities by a large manufacturer in Europe with cheap labor, we are enabled to give you this outfit, provided you will send us \$1.00 to pay for a one year, new or renewal subscription to COLMAN'S RURAL WORLD and 35 cents extra to help pay mailing and packing charges on the telescope outfit (total \$1.35). Think of it—the solar eye-piece alone is worth more than that amount in the pleasure it gives—seeing the sun spots as they appear, and inspecting solar eclipses.

The Excelsior Multi-focal Telescope has a multiplicity of uses—its pleasure is never dimmed—each day discovers some new delight. Distinguish faces blocks away. Read signs invisible to the naked eye. Use it in cases of emergency.

Take the Excelsior Multi-focal Telescope with you on pleasure and vacation trips, and you can take in all the scenery at a glance—ships miles out; mountains, encircled by vapors; bath-ers in the surf; tourists climbing up the winding paths.

Used as a microscope it is found of infinite value in discovering microbes and germs in plants and seeds, etc. The Excelsior Multi-focal Telescope is mechanically correct—brass-bound, brass safety cap to exclude dust. Powerful lenses, scientifically grounded and adjusted. Handy to carry—will go in pocket when closed, but when opened is over 2 1/2 feet long. Circumference, 5 1/4 inches. Here-fore telescopes of this size, with solar eyepiece and multi-focal lenses, have sold for \$5 to \$10, or even more. We do not claim our telescope is as nice and expensive in every particular of construction as a \$10 telescope should be; that would be unreasonable; but it is a positive wonder for the price. Each telescope is provided with 2 interchangeable objective lenses—one for ordinary range and hazy atmosphere, the other for extra long range in clear atmosphere, increasing the power and utility of Telescope about 50 per cent.

COULD COUNT CATTLE NEARLY 20 MILES AWAY F. S. Patton, Arkansas City, Kansas, writes: "Can count cattle nearly 20 miles; can see large ranch 17 miles east, and can tell colors and count windows in house."

L. S. Henry, The Saxon, New York, writes: "Four solar eyepieces is a great thing. I witnessed the eclipse at the Austrian Tyrol when the sun was almost 80 per cent concealed."

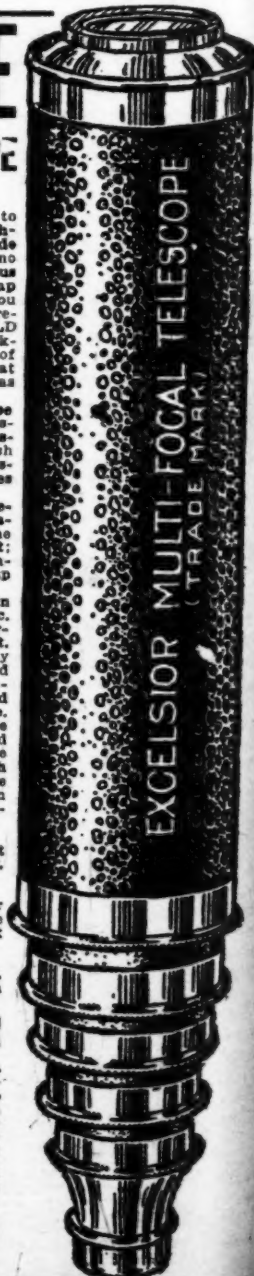
COULD SEE SUN SPOTS Rutland, Vt., Feb. 18, 1910.—Telescope arrived O. K. I have seen the spots on the sun for the first time in my life.—Dan C. Safford.



LIMITED OFFER

Send us \$1.00 to pay for a one year extension on your subscription to COLMAN'S RURAL WORLD, and 35 cents extra to help pay mailing and packing charges on the complete telescope outfit, which will be sent postpaid (total amount to remit, \$1.35). Absolute guarantee of satisfaction or money refunded. DO IT NOW.

COLMAN'S RURAL WORLD
718 LUCAS AVE., ST. LOUIS, MO.



In on bust m waist m age on aprons 12 Waist 36, 38, 40. It requi terial fo cut in 8 inches v yards of size, an foot. T each pat 1262. B Cut in It requi terial fo of 27-in waist. 1255. GI Cut in years. I material dress, w 30-inch

PATTERNS FOR RURAL WORLD READERS.



In ordering patterns for waist, give bust measure only; for skirts, give waist measure only; for children, give age only; while for patterns for aprons say, large, small or medium.

1257-1236. Ladies' Costume.

Waist 1257 is cut in five sizes: 34, 36, 38, 40 and 42 inches bust measure. It requires $2\frac{1}{4}$ yards of 42-inch material for a 36-inch size. Skirt 1236 is cut in 5 sizes: 22, 24, 26, 28 and 30 inches waist measure. It requires $3\frac{1}{4}$ yards of 44-inch material for a 24-inch size, and measures 27 yards at the foot. Two separate patterns, 10c for each pattern.

1262. Boys' Jacket Suit With Sleeveless Underwaist.

Cut in four sizes: 3, 4, 5 and 6 years. It requires $2\frac{1}{2}$ yards of 36-inch material for a 4-year size, with 1 yard of 27-inch material for the underwaist.

1255. Girls' Dress, With or Without Tucker.

Cut in four sizes: 4, 6, 8 and 10 years. It requires 3 yards of 36-inch material for a 4-year size, for the dress, with $\frac{1}{2}$ yard for the tucker, of 30-inch material.

1244. Dress for Misses and Small Women.

Cut in four sizes: 14, 16, 17 and 18 years. The 16-year size will require 3 yards of 27-inch material for the underwaist, and $5\frac{1}{4}$ yards for the over dress. The skirt measures about 27 yards at its lower edge.

1256. Ladies' Two-Piece Circular Skirt.

Cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires $2\frac{1}{4}$ yards of 48-inch material for a 24-inch size, which measures about 3 yards at the foot.

1242. Girls' Dress, With Vest.

Cut in four sizes: 4, 6, 8 and 10 years. It requires $3\frac{1}{4}$ yards of 44-inch material for an 8-year size.

1245. Ladies' Shirt Waist.

Cut in five sizes: 34, 36, 38, 40 and 42 inches bust measure. It requires $3\frac{1}{4}$ yards of 44-inch material for a 36-inch size.

1254. Ladies' Dressing Sack.

Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires $3\frac{1}{4}$ yards of 36-inch material for a 36-inch size.

1246. Girls' Dress With or Without Tunic.

Cut in four sizes: 8, 10, 12 and 14

THE MERRY GAME CLUB FOR OUR BOYS & GIRLS

Conducted by the President—Essilyn Dale Nichols, 1527 35th St., Rock Island, Illinois.

Well, little folks, I am going to print four games this week if I can, so I will cut my own talk short and begin right away. Our first prize game was sent in by Lillian Stroud, of Waukegan, Oklahoma. Here it is:

Letter Carrying.

(Described by Lillian Stroud.)

This is a nice game to play indoors. All players should be seated excepting two who represent the postmaster and the carrier. The seated players are given names of towns (names chosen may be written on a sheet of paper for postmaster's use) but each player should remember his or her, own town name. When players are named, carrier is blindfolded, and postmaster calls out: "I have a letter going from Chicago, Ill., to Buffalo, New York," (of course, name of any town may be called.) Then the players who have these names must change seats while the blindfolded carrier tries to catch one of them. If one is caught the carrier guesses what town it is. If guess is correct the player caught must take carrier's place and be blindfolded. Then postmaster calls out: "I have a letter going all over the world," and everybody changes seats. The carrier tries to get a seat during this change and the one left standing must be the carrier.

Lillian—I think your game of "Letter Carrying" would be very interesting. A prize will be sent you soon. Our next prize game was sent in by Margaret Kuhn, of New Alexandria, Pa. I should say prize games, for Margaret sent two. Here they are:

The Farmer in the Dell.

(Described by Margaret Kuhn.)

The players catch hands forming a circle and one is chosen for a farmer. Then the farmer chooses a wife, the wife chooses a child, the child chooses a nurse, the nurse chooses a dog and the dog chooses a bone, and the bone is the farmer the next time.

I think, Margaret, that the players walk in a circle and sing a little song while all this choosing is going on, do they not?

Johnnie Welcome.

(Described by Margaret Kuhn.)

Players choose sides—so many play-

years. It requires 3 yards of 44-inch material for an 8-year size.

1249. Ladies' House Dress.

Cut in six sizes: 34, 36, 38; 40, 42 and 44 inches bust measure. It requires $6\frac{1}{4}$ yards of 36-inch material for a 36-inch size. The skirt measures about 21-3 yard at the foot.

1235. Ladies' Apron, With or Without Sleeves.

Cut in three sizes: Small, medium and large. It requires $4\frac{1}{4}$ yards of 36-inch material for a medium size.

1258. Girls' Over Blouse Dress.

Cut in four sizes: 8, 10, 12 and 14 years. It requires 3 yards of 36-inch material for the dress, with $1\frac{1}{4}$ yard of 27-inch material for the underwaist, for an 8-year size.

These patterns will be sent to RURAL WORLD subscribers for 10 cents each (silver or stamps).

If you want more than one pattern, send 10 cents for each, additional pattern desired.

Fill out this coupon and send it to COLMAN'S RURAL WORLD, 718 Lucas Ave., St. Louis, Mo.:

Pattern No. Size Years

Bust in. Waist in.

Name

Address

ers on a side. Then one side decides on something to do, and says to the other side, "Here comes little Johnnie Welcome; want to learn a trade?" The other side asks: "What can you do?" The first side answers: "Anything at all." The other side then says: "Let's see you do it." And the first side begins to act out in pantomime the kind of work or play they had decided on. The other side tries to guess what they are doing and if they guess correctly the second side chases the first side and all caught belongs to second side. Begin play over again, only second side chooses something to do this time, and the side that has the largest number of players at the end of the game wins the game.

Margaret—This game is a great deal like a game we printed not long ago, only it had a different name. You will receive a prize post card soon. Our fourth prize game was sent in by Bessie Gardner of Elkland, Mo. It is given below:

A-B-C, Squat Where You Be.

(Described by Bessie Gardner.)

In this game there is one catcher who must play with his or her eyes shut. The rest of the players are squatters. When the play begins the squatters all start to run and the catcher (who has eyes shut) calls out: "A-B-C, squat where you be!" and the squatters must squat where they are. The catcher then goes among the squatters with eyes shut and the first one caught must be catcher.

Bessie—A prize post card will be sent you shortly.

Since last week games have been received from the following members: Daisy Kemp, Tyrone, Okla.; Luella Slocumb, Ark.; Della Wilmurth, Moscow, Ky.; Susie B. Adams, Boston, Booth, Guernsey, O.; Leetus Crabb, Ga.; Delsie Dykes, Eden, Ind.; Elvira Johnson, Patterson, N. Y.; Verda Bagwell, Bernice, La.

HOME-MADE AMUSEMENTS FOR LITTLE FOLKS.

1. Crayons and fashion sheet children.
2. Big needle and string for
 - (a) Popcorn.
 - (b) White and black seed.
 - (c) Beads.
 - (d) Red rose leaves.
 - (e) Buttons.
 - (f) Cranberries.
3. Dish of paste, scissors, magazines, wrapping paper or cambric scrapbook.
4. Old ribbons to tie bow-knots on furniture.
5. Traced animals, scissors, paste, and blocks or spools to make them stand.
6. Strips of worsted and turkey feathers for Indian head band.
7. Pan of water and,
 - (a) Cork boats.
 - (b) Egg-shells.
 - (c) Nut-shells.
 - (d) Needles to race.
8. Home-made animals,
 - (a) Carrots and tooth-picks.
 - (b) Crooked sweet and Irish potatoes.
 - (c) Peanuts.
 - (d) Prunes and cloves for turtles.
9. Calendar pictures cut into odd shapes for puzzles.
10. Silver thimble and biscuit dough.
11. Yarn, strips of worsted or raffia to weave, or loom made from old slate frame, or card-board.
12. Discarded clothes for dressing up.—Mona Verne Lace, Minnesota.

Out of His Place.

While traveling on a steamboat, says the San Francisco Star, a notorious card sharper who wished to get into the good graces of a clergyman who was on board, said to the reverend gentleman:

"I should very much like to hear one of your sermons, sir."

"Well," replied the clergyman, "you could have heard me last Sunday if you had been where you should have been."

"Where was that, then?"

"In the county jail," was the answer.

—Youth's Companion.

A saturated solution of Epsom salts is a good remedy for burns. Apply as soon as possible, and keep wet continually until the pain ceases.

The Bad Man of Las Vegas

By Vaughan Kester

(Copyright, 1915, The Bobbs-Merrill Co.)

(Continued from last week.)

THE Bad Man turned the matter slowly over in his mind. He had formed a very unfavorable opinion of the homesteader, and was wondering whether it was not a duty he owed society to tell him so frankly. He allowed a certain latitude because of the different sense of humor different men have, but there was nothing funny about the homesteader. He was just plain uncivil.

"Yes, sir-ee," said the homesteader, "western Kansas is a hell of a place. It ain't worth the powder it would take to blow it to blazes. I wish I'd never seen it. When I made up my mind to come West, my wife sort of persuaded me to stop there. She didn't want to go any farther. Sort of wanted to keep somewhere near the folks in old Vermont. Then she was taken sick; she was ailing before we started West. Then our two boys up and died, and now the young un's down. It's mighty hard on her ma. I got a brother in Sunken River Valley, and some of the folks from back East moved out there while we were in Kansas. My wife will be mighty well satisfied when she gets among her own sort again. Women get lonely so darn easy."

They could hear the mother singing softly to the sick child. The Bad Man jerked his thumb over his shoulder.

"What's the matter?"

"Fever," said the other locanically.

"So you are from Vermont?"

"Yes. Wish I was there now, you bet. It's God's own country."

"What part of the state do you come from?"

"Central part. Barrettsville."

The Bad Man started violently, but recovered himself on the instant.

"I suppose you are pretty well acquainted there?" he asked, with studied indifference.

"I ought to be. Lived there most of my life."

"That's singular. I met a fellow from Vermont just the other day, from Barrettsville, too."

"Lots of our folks have come West. They're scattered all over out here. Some of 'em are doing mighty well, too."

"You didn't happen to know the Thomases, did you?"—with elaborate carelessness.

"Which?"

"I guess the man I am asking about had something to do with the mills. There are mills there, ain't there?"

"Well, I declare! That's funny!" and the homesteader laughed a mirthless cackle. "Should say I did know the Thomases. My wife was a Thomas—old French Thomas' daughter. But"—lowering his voice—"the old man's been dead five years come next May."

The Bad Man turned his face away. So that was the woman he had loved!

There was silence again, undisturbed save for the clatter of the horses' hoofs and the rattle of the wagon. The child was asleep, and its mother no longer sang to it.

The homesteader thrust aside the flaps and glanced in. The woman, with the child in her arms, was seated on a mattress at the back of the wagon, looking out at the long dusty streak that wound over the range and lost itself in the gray distance of the plain.

Craning his neck the Bad Man saw her, and then as her husband dropped the flaps, he pulled up his horse and drew in behind the wagon. The woman raised her eyes.

"Is the little one asleep?" he asked, his voice shaking with an awkward tenderness.

"Yes. She's just pining away for green fields and trees."

He surveyed the woman before him with a certain wonder. He would

never have recognized her, she was so changed, so altered from the likeness he had carried in his heart; but now, knowing who she was, he could trace where she had fallen from that likeness. He was quite sure she could not recognize him, for he had changed, too, but in a different way.

"If he'd drive slower, wouldn't it be easier for her?"

The woman looked into his face in alarm.

"We want to get there as quick as we can. Seems as though we'd never get there."

"You can't make it today."

"My husband says he'll drive till he gets there if it takes all night."

"There'll be a dead horse between the shafts if he tries it," said the Bad Man in a tone of calm conviction.

"The horse—" and the woman stopped.

"I don't reckon he sets much value on the brute from the way he drives."

The woman gazed fixedly into his face. "Did he tell you?" she questioned in a frightened whisper.

In a flash he realized what the trouble was.

"He shouldn't have done it," he said gravely.

"I know that," she answered breathlessly. "But what could he do? Our own horse had died. We had no money, and with the baby sick we just couldn't stop! If he is found out, what then?"

The Bad Man shook his head dubiously. "I'd rather not say."

"Do they hang men for horse stealing?"

"They have," he answered shortly.

Further conversation was interrupted by the sudden stopping of the wagon.

"Damnation! Which trail do I take?"

The Bad Man pointed to the right.

"There's your road. You'll find it plain enough."

"Much obliged to you, stranger. I don't reckon you're going over to Sunken River Valley yourself?"

"Hold on; and a detaining hand was placed upon the lines the homesteader held. "That's a good horse you're driving, pardner, but if you keep this pace you'll take only his hide and bones into Sunken River Valley with you."

"I've got to get there, horse or no horse," answered the man nervously.

"How'd you like to trade? I've taken a fancy to that animal of yours, and if you're bent on killing a horse I don't know but I'd rather have you kill the one I'm riding."

The homesteader leaped from his seat on the instant.

"I'll do it!" Then he bethought him that perhaps some little display of reluctance might be seemly and natural. "Your horse is sound, of course?"

"Sound as a dollar. Look it over if you don't think so."

The woman came to the front of the wagon, listening breathlessly. Now she put the flaps aside and looked out.

Her husband turned to her. "We're going to swap horses—you don't care, do you?"

She tried to meet the glance of the Bad Man, but could not.

"It's all right, wife?"

"Yes," she answered in a low voice; "it's all right."

The animal was already free from the shafts, and at her word he led it out from between them. The Bad Man threw himself astride the stolen horse.

"I'll say good day to you, pardner—and to you"—to the woman, and without a word more he was galloping off down the trail toward Las Vegas.

"I guess I was darn lucky to get rid of that horse," the homesteader remarked, as he gazed after the Bad Man.

The woman said nothing. She only wondered.

(THE END.)

To clean water bottles, pickle jars, or any glass that is stained, when unable to get the hand in to wash properly, crush the shell of an egg small enough to get through the neck of the bottle, add a little warm water, shake well, and you will not only find the glass clean, but the bottle nicely polished.

POULTRY RAISING FOR FUN & PROFIT

EDUCATED CAPONS AS "MOTHERS" FOR LITTLE CHICKS.

To have educated capons or trained capons is a simple task. The object of the training is to get the capon to "mother" and take care of a brood of little chicks. Some persons may doubt the assertion that a capon will care for, cluck to and take better care of a brood of little newly hatched chicks than a mother hen. I know it to be a fact, however, that a capon will do those things, because I have raised each year for the last six years an average of 500 chickens, and capons have been the only means of brooding the little fellows. We have not, during the last six years, had a brooder of any kind on our farm; practically all our chicks were raised with capons, and much better in every way than could be done with hens.

Capons, like hens, vary as to the individual. With little chicks, some are better than others. But out of the hundreds that I have trained, I have never as yet found a capon that would refuse to hover, cluck to and mother the chicks. I shall explain exactly how we proceed when starting a capon with newly hatched chicks.

First, it must be understood that a capon is different from any other feathered creature. His nature has been changed by the simple operation necessary to make a capon, and he no longer has an inclination to run with hens or other poultry. But also it must be remembered that not even a capon likes to live a solitary, lonesome existence, and in his effort to find companionship, the capon naturally turns to the young and motherless young of his species. He simply takes conditions and the little chicks as he finds them and does the best he can. So there is not much trouble in giving father capon his education.

The main thing necessary is to have the capon gentle. Be sure he is well powdered to free him of vermin. Handle him enough so that he will not be afraid of you; get acquainted with him. We always prepare a small yard and colony coop usually about 10 days before the hatch comes off, and place the capon in it at that time. This will give him time to get located and accustomed to his new quarters and be contented with his surroundings before the little chicks are given him. All of which is very necessary if the best results are expected.

If the capon is a young one and has had no previous experience it will be best to let the little chicks be at least three days old before giving them to him. When everything is ready and the little chicks have arrived, wait until after dark. Your brood coop, of course, will have no perches in it, so you will find the capon hovering in one corner on the floor. Take five or six little chicks and place them under his wings and amongst his soft feathers, speaking to him in a gentle coaxing way all the time. Smooth his feathers out with your hand and close the door gently, so that it will be quite dark in his coop.

You must be up early in the morning, just about daylight. This will be

no hardship as all real poultry raisers have the habit of getting up early to see that everything progresses all right.

If you have a real capon and instructions have been followed, nine times out of ten he will come out of the coop clucking and scolding with feathers ruffled and wings spread exactly like an old hen, only more so. Now you have your educated capon. He will care for that brood after he has started and you may then add just as many more as you like, and he will accept them and make the best "mother" you ever saw.

If you wish to change him to another brood of younger chicks, all that you will have to do is to wean him from the first ones. Shut him up for a day or so and start him with the young ones, giving them to him in the evening, same as before, and keeping the former brood away from him until he gets started with the new ones. You can repeat this as often as you like.—Mrs. George Beuoy, Kansas.

GUINEA RAISING IS PROFITABLE AND INTERESTING.

Guineas are one of the easiest kinds of poultry to raise. If proper care is taken of them, they will not be wild. Anyone who wishes to go into guinea raising should purchase eggs and set them under a common hen. Grown guineas that are wild cannot be tamed and their chicks will be wild, but guinea chicks with a common hen mother if treated right will be as tame as any fowl.

The first feed should be fine rolled oats and hard boiled eggs. They should never have wet food of any kind. They are not of the right nature for wet food. After the first week they may be fed coarse cornmeal.

The first two weeks the chicks should be cooped with the hen. Then they should be given a good range. If one doesn't have a range for them, it is useless to try to raise them.

By feeding at the same place every night and morning guineas will always return at feeding time. If there are trees that they can get into their wings should be clipped to prevent this, because of the danger from owls.

When the hens begin to lay they will always disappear at the same time every morning. By hiding and watching, anyone can find the nests.

The male and female will start together and after a little while she will vanish. He will feed along for a ways and then call. Take note of where he calls. Late in the afternoon one may go to the place where he called and near there one will find the nest. After eight or more eggs have been laid, two or three may be removed at a time from the outer edge, but care should be taken to leave at least three and not to touch any eggs not removed.

When the hens are ready to sit, they may be moved to the henhouse, if allowed to sit on their own nest for about one week. After dark go and take up the hen and eggs and carry to the other nest. Arrange the eggs and put the hen on them. In the morning feed before letting out.

In the winter, guineas should range as in the summer. They will roost in



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GEORGE BEUOY, R. R. 61, Cedar Vale, Kan.

Those hatching their ma with the ment, I doubtful reputation reliability

FREE for to intro it who has be richer. It power of m matter how waiting for financial jor and it six n V. Jackson

the henhouse if allowed to go in and out. Warm grain may be fed at night. Plenty of fresh water should be provided, but no wet feed. Whole wheat and cracked corn are best.

It is useless to try to fatten guineas and should not be attempted. They will get most of their living themselves.—Mrs. Curtis McCosco, Vermont.

DRY MASH FOR DUCKS.

Dry feeding for ducks may sound like heresy, but an experiment made the past season has shown that just as good results are to be obtained as when the conventional wet mash is given.

Two flocks, hatched at practically the same time and in part from the same eggs, were grown on neighboring establishments. One flock received a mash of bran, corn meal, alfalfa, and beef scraps, supplemented with cracked corn and wheat. This flock also had access to a small pond. The other flock received only a ration of dry mash from the time the ducklings began to eat, except that green food in the way of grass, lettuce, or spinach was added at various times. This mash was exactly the same as that fed the laying hens, and was given to the ducks in a long hopper four or five times a day.

Now, the growth of the ducks in each flock was practically uniform, and in each case the first eggs came at about the same time. So far as can be judged, the birds raised on dry mash are in just as good condition as the others.

Indian Runners learn to operate a self feeder even more readily than chickens do. With a self feeder filled with cracked corn in their yard, a flock of ducklings will keep themselves occupied all day and secure enough corn to satisfy their appetites, if a heavy evening meal of mash be also given.

BEST FARM POULTRY BREEDS.

To the question that is asked oftenest by farmers who want to improve their poultry flocks, "Which is the best breed?" Prof. H. A. Bittenbender of the agricultural extension department of Iowa State College makes this answer:

The breeds that generally give the best results on the farm are the general purpose breeds. The Plymouth Rocks, Wyandottes, Rhode Island Reds and Orpingtons belong to this class. The Leghorn, Minorca, Ancona and Andalusian are egg breeds, but the whole profit from the flock does not come from the sale of eggs alone, but also from market poultry. If production is reckoned for the year the egg breeds will probably lay a few more eggs than the heavier fowl or the so-called dual purpose class. It is also true, however, that egg breeds do not lay as consistently throughout the winter where the climate is cold and variable, but their spring and summer laying gives them their larger egg record. The price received for these eggs is not quite as high as for winter eggs, and hence as good a profit may generally be secured from the eggs of the heavier breeds, such as the Rocks, Reds, Wyandottes and Orpingtons. Besides this, more money can be secured from the sale of stock of the heavier birds each year. If the heavier breeds are raised, the two advantages will give a larger profit than the egg breeds."

Those who are selling eggs for hatching must be particular with their matings, and more particular with the packing of the eggs for shipment. It never pays to send any doubtful ones. Build up a trade and reputation for honesty, accuracy, and reliability.

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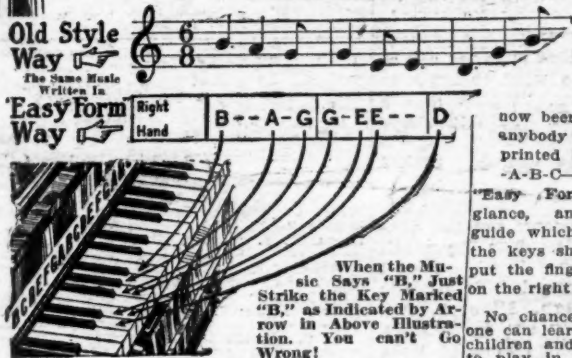
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